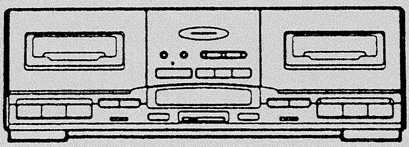
PIONEER

The Art of Entertainment

Service Manual



ORDER NO.
ARP2410

STEREO DOUBLE CASSETTE DECK

CT-J400WR
CT-J300WR
CT-J200WR

CT–J400WR, CT–J300WR AND CT–J200WR HAVE THE FOLLOWING:

Type	Model			Power Requirement	Remarks
	CT–J400WR	CT–J300WR	CT–J200WR		
ZEBM	○	○	○	(DC power supply)	

- This manual is applicable to ZEBM type.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.
- These products are components of systems. As to the system composition, refer to the system manuals.
- Each of these products does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component (s), otherwise damage may result.

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1. EXPLODED VIEWS AND PARTS LIST

1.1 EXTERIOR

NOTES:

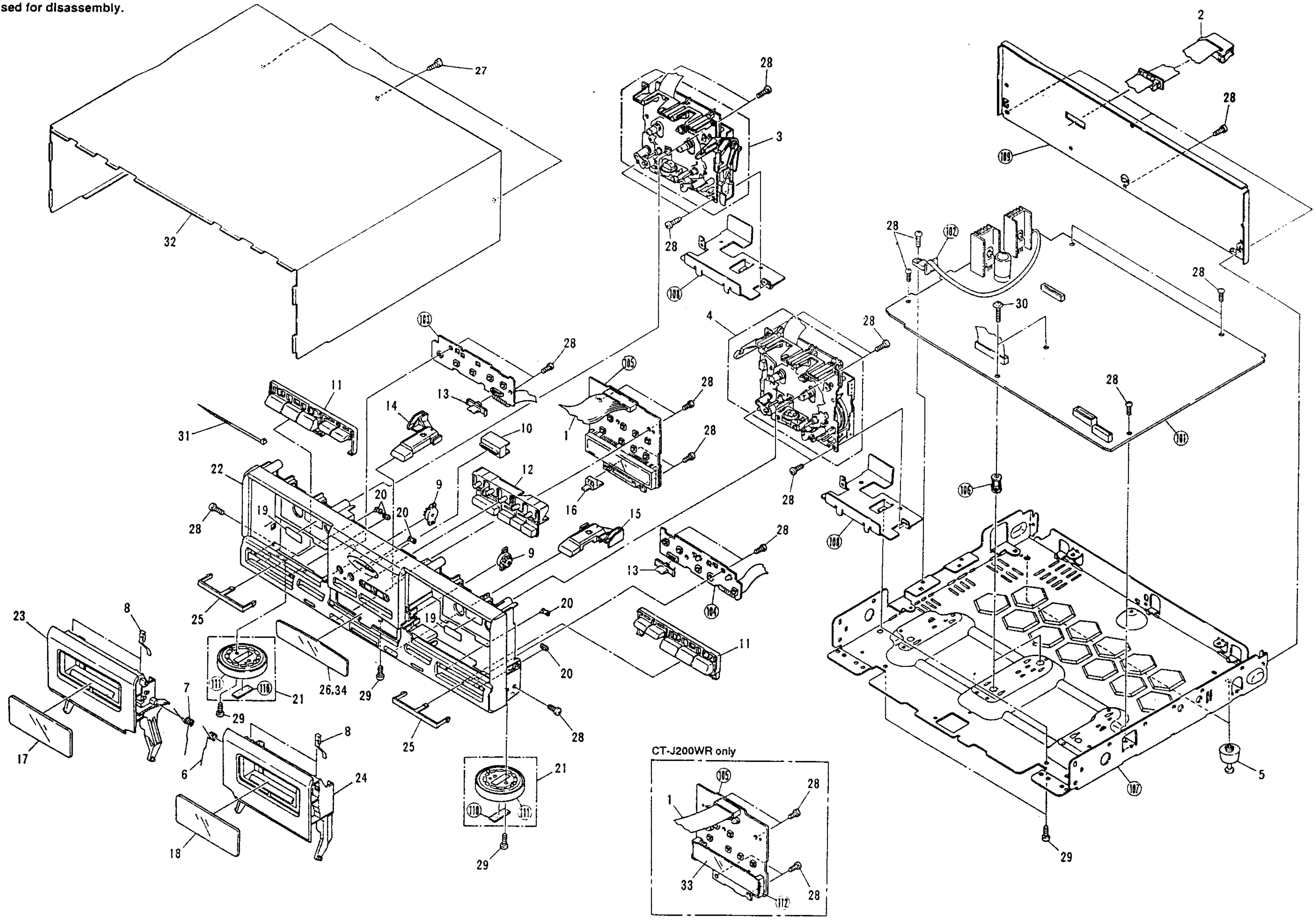
- The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List

Mark	No.	Description	Part No.
	1	Lead card (29P) (CT-J400WR/CT-J300WR)	RDD1211
		Lead card (17P) (CT-J200WR)	RDD1244
	2	Connector assembly (15P)	RKP1358
⊙	3	Mechanism unit 1	RYM1162
⊙	4	Mechanism unit 2 (CT-J400WR/CT-J300WR)	RYM1163
		Mechanism unit 2 (CT-J200WR)	RYM1164
	5	Leg assembly (S)	AMR1937
	6	Door spring R	RBH1313
	7	Door spring L	RBH1314
	8	Half pressure spring	RBK1004
	9	Damper assembly	VXA1153
	10	Indicator lens	AAK2224
	11	Operation button	RAC1678
	12	Operation button C (CT-J400WR)	RAC1679
		Operation button C (CT-J300WR/CT-J200WR)	RAC1680
	13	Slide SW knob	RAC1687
	14	Eject knob L	RAC1688
	15	Eject knob R	RAC1689
	16	VR knob (CT-J400WR/CT-J300WR)	RAC1690
	17	Door lens L	RAH2010
	18	Door lens R	RAH2011
	19	Remaining sheet	REE – 113
	20	Indicator lens	RNK1591
	21	Foot assembly (CT-J400WR/CT-J300WR)	RXA1448
		Foot assembly (CT-J200WR)	RXA1277
	22	Front panel (CT-J400WR/CT-J300WR)	RAH1976
		Front panel (CT-J200WR)	RAH1977
	23	Door panel L (CT-J400WR)	RAH1979
		Door panel L (CT-J300WR)	RAH1978
		Door panel L (CT-J200WR)	RAH1980
	24	Door panel R (CT-J400WR/CT-J300WR)	RAH1981
		Door panel R (CT-J200WR)	RAH1982
	25	Azimuth cover (CT-J400WR/CT-J300WR)	RAH2013
		Azimuth cover (CT-J200WR)	RAH2014
	26	FL lens (CT-J400WR/CT-J300WR)	RAH2037
	27	Screw	BBZ30P060FCC
	28	Screw	BBZ30P080FMC
	29	Screw	BBZ30P100FZK
	30	Screw	IBZ30P150FCC
	31	Cord clamper	REC – 371
	32	Bonnet assembly	RXX1476
	33	Display lens (CT-J200WR)	RAH2012
	34	LED lens (CT-J200WR)	RAH2015
	101	Main unit (CT-J400WR)	RWZ2405
		Main unit (CT-J300WR)	RWZ2576
		Main unit (CT-J200WR)	RWZ2536
	102	Transistor 1 unit (CT-J400WR/CT-J300WR)	RWZ2573
		Transistor 1 unit (CT-J200WR)	RWZ2574
	103	Operate 1 unit	RWZ2407
	104	Operate 2 unit	RWZ2408
	105	Display unit	RWZ2406
	106	PCB spacer	PNY – 404
	107	Main chassis	RNB1072
	108	Mechanism shield plate	RNE1503
	109	Rear panel (CT-J400WR)	RNA1528
		Rear panel (CT-J300WR)	RNA1527
		Rear panel (CT-J200WR)	RNA1526
	110	Cushion	REB1091
	111	Foot	RNK1770
	112	LED holder	RNK1810

Exterior

NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.


27
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(108)
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(101)
(106)
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(104)
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(111)
(110)
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(110)
(111)
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CT-J200WR only
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(112)
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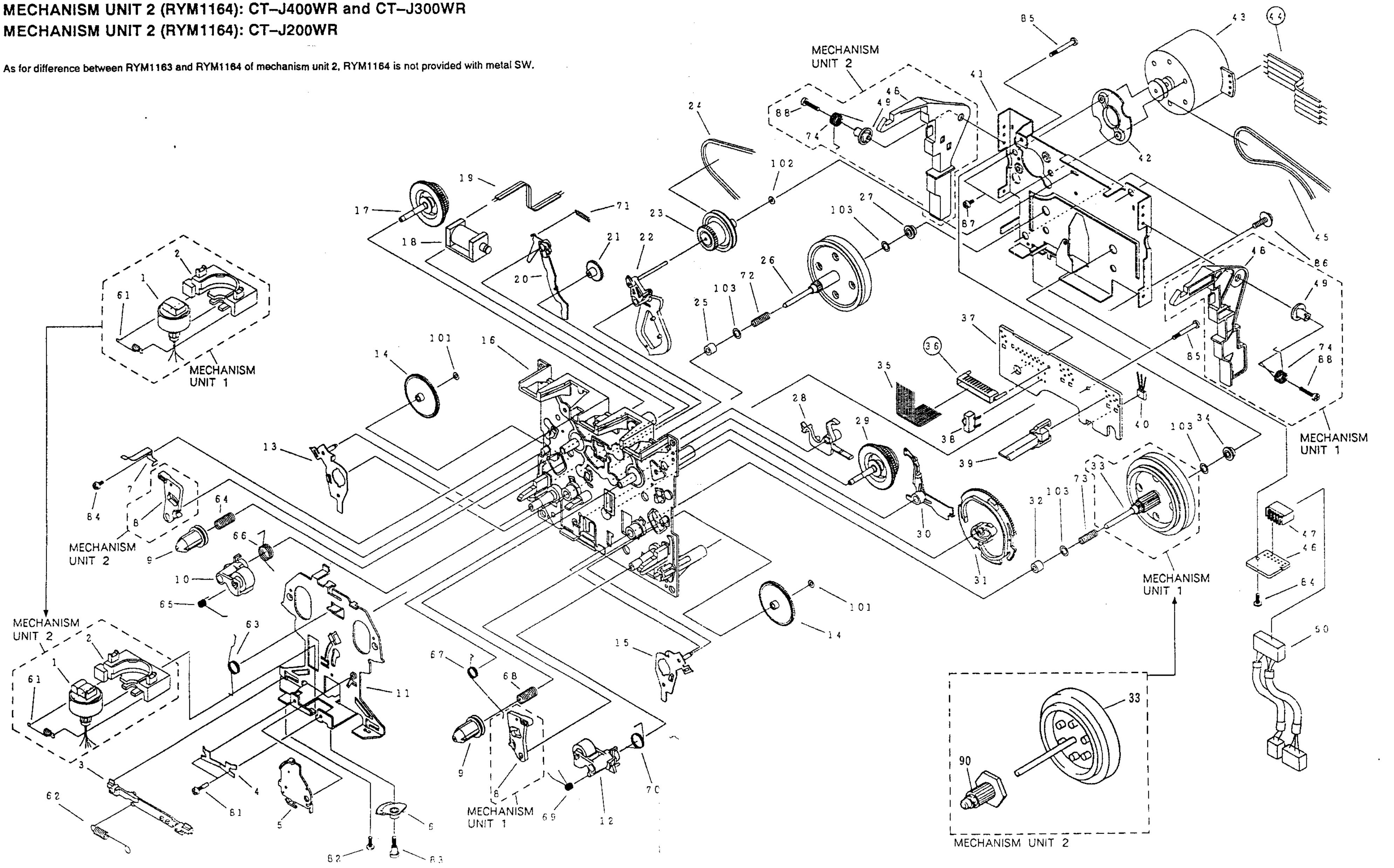
5

1.2 MECHANISM UNIT 1 (RYM1162)
MECHANISM UNIT 2 (RYM1164): CT–J400WR and CT–J300WR
MECHANISM UNIT 2 (RYM1164): CT–J200WR

A

Note: As for difference between RYM1163 and RYM1164 of mechanism unit 2, RYM1164 is not provided with metal SW.


B
C
D
MECHANISM UNIT 1
MECHANISM UNIT 2
MECHANISM UNIT 2
MECHANISM UNIT 1
MECHANISM UNIT 1
MECHANISM UNIT 1
MECHANISM UNIT 2
MECHANISM UNIT 2
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101
102
103

Parts List

Mark	No.	Description	Part No.
	1	ASS'Y HOLDER HEAD (Mechanism unit 2)	RXA1416
		ASS'Y HOLDER HEAD (Mechanism unit 1)	RXA1400
	2	FLAME HEAD	RNK1715
	3	LEVER HEAD	RNK1716
	4	SPRING AZIMUTH	RBK1006
	5	ASS'Y ARM ASSIST	RXA1401
	6	GEAR ARM HEAD	RNK1717
	7	SPRING CASSETTE	RBK1039
	8	EJECT LOCK	RNK1718
	9	CAP REEL	RNK1719
	10	ASS'Y PINCH ARM L	RXA1403
	11	CHASSIS HEAD	RNE1437
	12	ASS'Y PINCH ARM R	RXA1404
	13	ASS'Y ARM PLAY L	RXA1405
	14	GEAR PLAY	RNK1720
	15	ASS'Y ARM PLAY R	RXA1406
	16	CHASSIS OS.	RXA1411
	17	ASS'Y SUB REEL L	RXA1407
⚠	18	SOLENOID	RXP1017
	19	WIRE	RDC1006
	20	ARM RVS	RNK1721
	21	GEAR FF	RNK1723
	22	ASS'Y ARM FR	RXA1412
	23	ASS'Y PULLEY FR	RXA1413
	24	BELT FR	REB1158
	25	METAL	RNG1048
	26	ASS'Y FLYWHEEL L (Mechanism unit 1)	RXA1423
		ASS'Y FLYWHEEL L (Mechanism unit 2)	RXA1476
	27	METAL	RNG1005
	28	ARM BRAKE	RNK1724
	29	ASS'Y SUB REEL R	RXA1408
	30	ARM TRIGGER	RNK1722
	31	GEAR CAM	RNK1725
	32	METAL	RNG1049
	33	ASS'Y FLYWHEEL R (Mechanism unit 1)	RXA1424
		ASS'Y FLYWHEEL R (Mechanism unit 2)	RXA1415
	34	METAL	RNG1004
	35	WIRE (14P) (Mechanism unit 2)	RDD1217
		WIRE (12P) (Mechanism unit 1)	RDD1249
	36	HOLDER WIRE	RNK1683
	37	P.C. BOARD	RNP1436
	38	SWITCH MODE	RSN1020
	39	SWITCH (LEAF)	RSN1019
	40	HALL IC.	DN6851A
	41	BRACKET FW	RNE1438
	42	SPACER	RNK1822
	43	ASS'Y MOTOR (Mechanism unit 2)	RXM1055
		ASS'Y MOTOR (Mechanism unit 1)	RXM1053
	44	WIRE	RDD1012
	45	BELT MAIN (Mechanism unit 1)	REB1159
		BELT MAIN (Mechanism unit 2)	REB1162
	46	P.C. BOARD	RNP1348
	47	HOUSING (Mechanism unit 2)	RKP1397
		HOUSING (Mechanism unit 1)	RKP1396
	48	EJECT LEVER L (Mechanism unit 2)	RNK1831
		EJECT LEVER R (Mechanism unit 1)	RNK1811
	49	COLLAR	RNK1704
	50	WIRE HEAD (Mechanism unit 2)	RKP1502
		WIRE HEAD (Mechanism unit 1)	RKP1501
	61	SPRING	RBH1282
	62	SPRING	RBH1283
	63	SPRING	RBH1284
	64	SPRING	RBH1286
	65	SPRING	RBH1288
	66	SPRING	RBH1291
	67	SPRING	RBH1285
	68	SPRING	RBH1287
	69	SPRING	RBH1289
	70	SPRING	RBH1290
	71	SPRING	RBH1292
	72	SPRING	RBH1061
	73	SPRING	RBH1060
	74	SPRING (L) (Mechanism unit 2)	RBH1319
		SPRING (R) (Mechanism unit 1)	RBH1320
	81	SCREW	RBA1023
	82	SCREW	RBA1027
	83	SCREW	RBA1030
	84	SCREW	PCZ20P040FMC
	85	SCREW	RBA1093
	86	SCREW	RBA1094
	87	SCREW	RBA1100
	88	SCREW	RBA1095
	89	......	
	90	GEAR FW R (Mechanism unit 2)	RNK1733
	101	WASHER	RBF1044
	102	WASHER	WA16D032D025

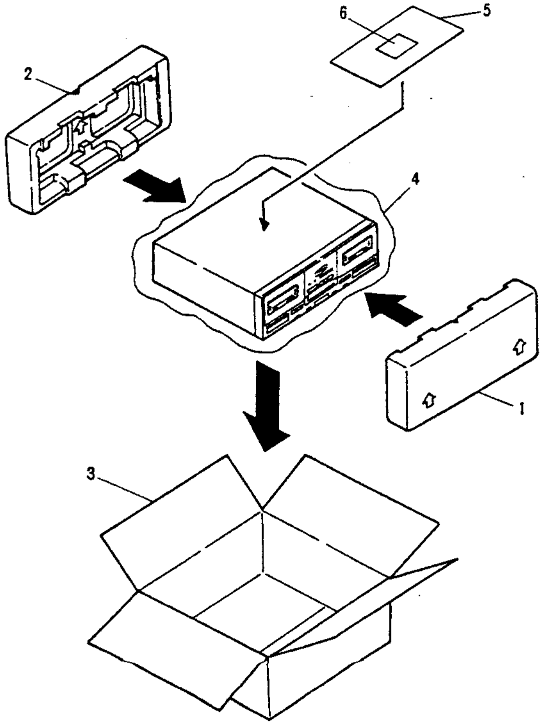
2. PACKING

NOTES:

- The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The iustructien manual is packed in the units of M–J200/M–J300 and M–J400/M–J500.

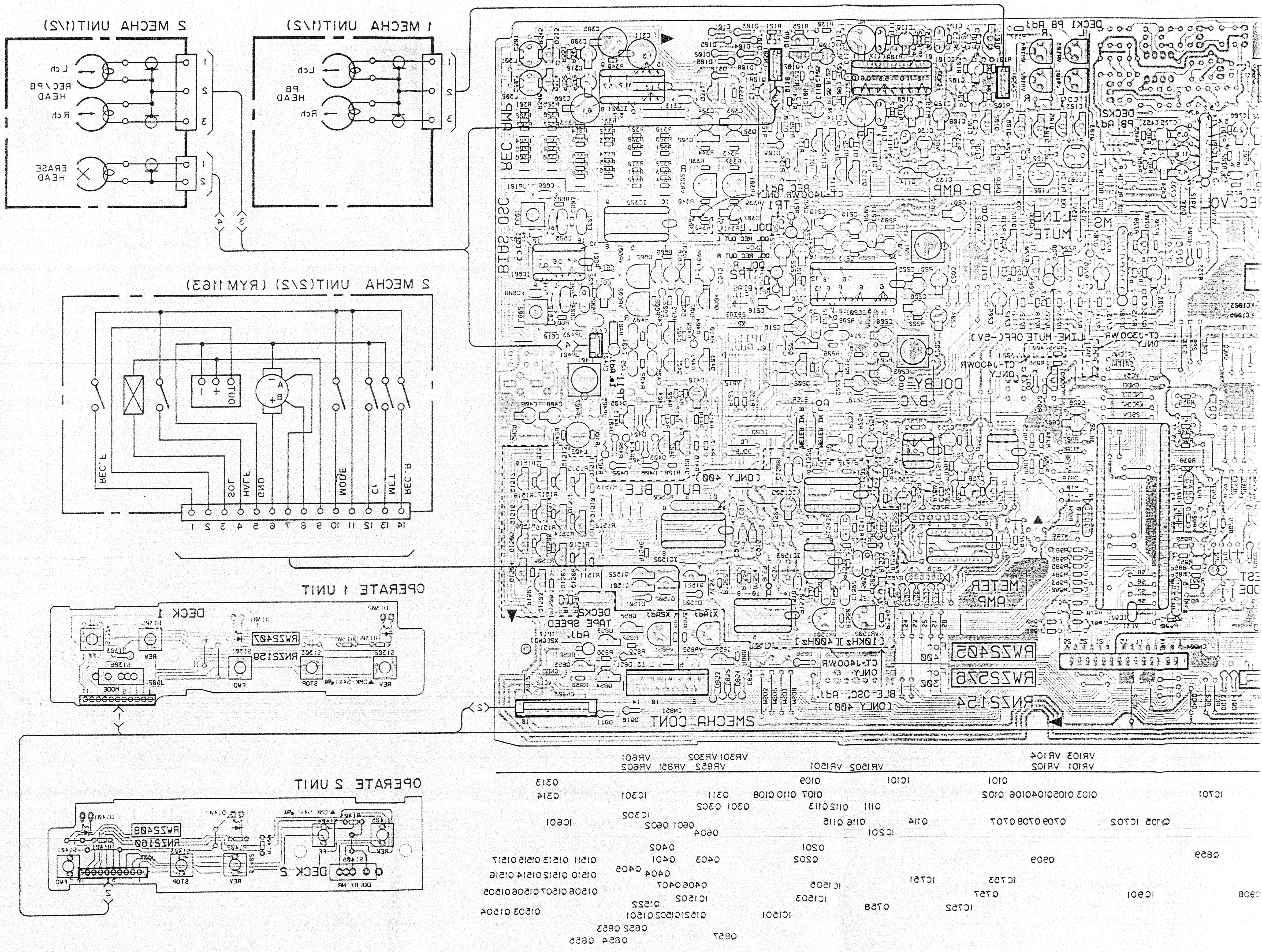
Parts List

Mark	No.	Description	Part No.
	1	Pad (F)	RHA1085
	2	Pad (R)	RHA1086
	3	Packing case	RHG1337 (CT-J400WR) RHG1336 (CT-J300WR) RHG1334 (CT-J200WR)
	4	Sheet	RHX1006
	5	Caution ("NOTE")	ARH1105
	6	Caution card	RRN1001



3. P. C. BOARDS CONNECTION DIAGRAM AND SCHEMATIC DIAGRAM

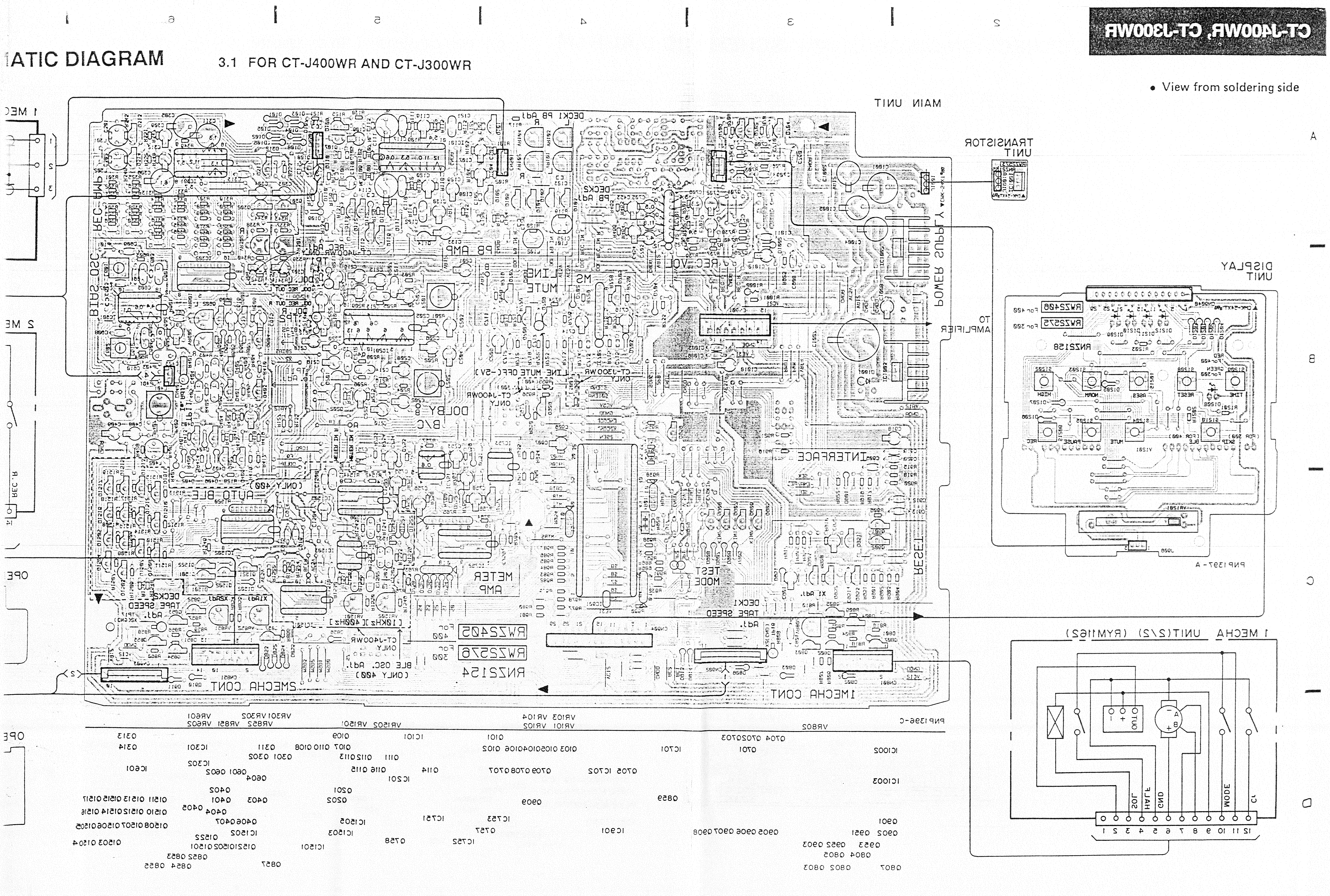
3.1 FOR CT-J400WR AND CT-J300WR


2 MECHA UNIT(1/2)
1 MECHA UNIT(1/2)
REC/PB HEAD
PB HEAD
ERASE HEAD
2 MECHA UNIT(2/2) (RYM1163)
OPERATE 1 UNIT
DECK 1
OPERATE 2 UNIT
DECK 2
REC AMP
BIAS OSC
PB AMP
DOLBY B/C
AUTO BLE
METER AMP
2MECHA CONT
RWZ2405
RWZ2576
RNZ2154

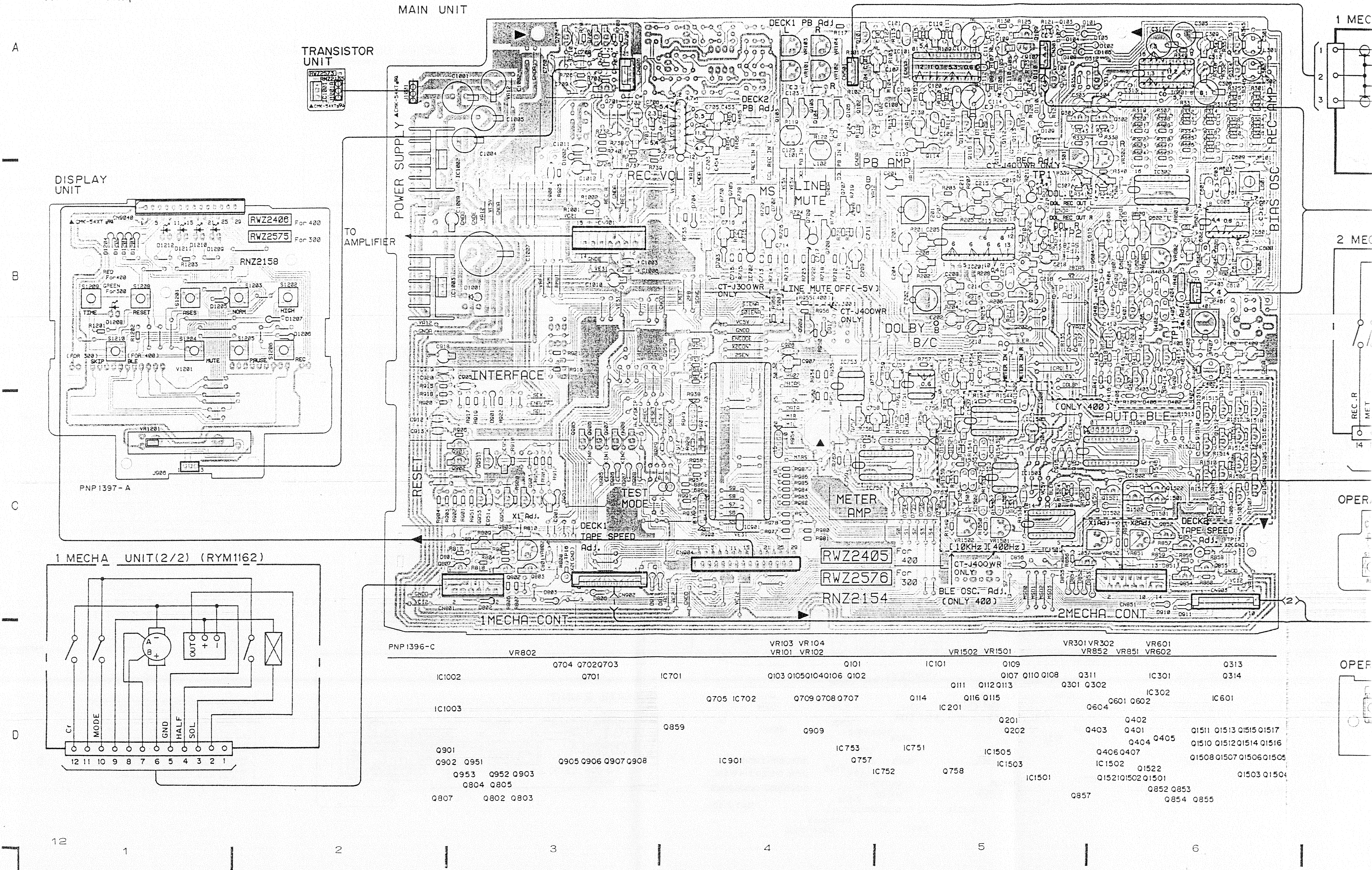
ATIC DIAGRAM

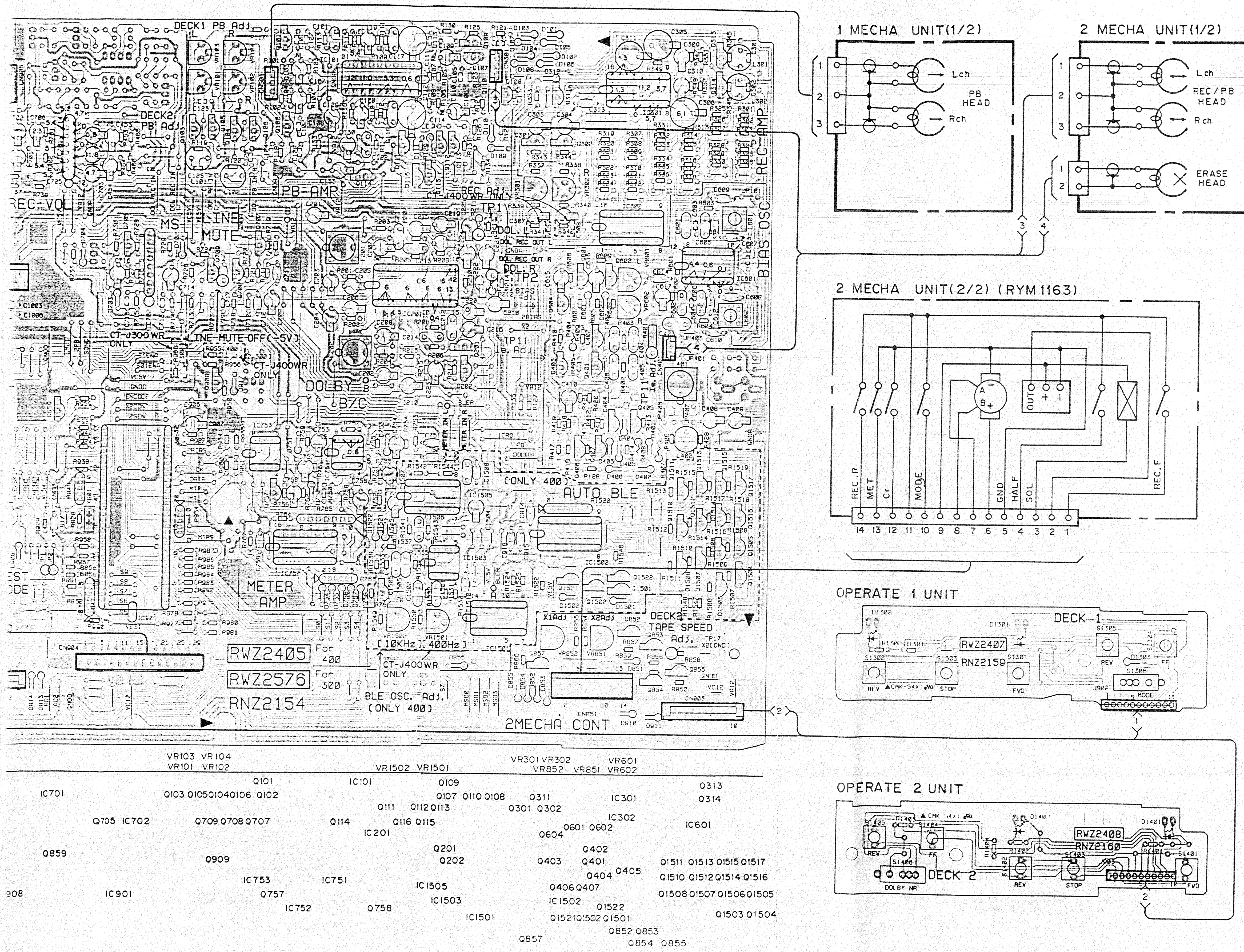
3.1 FOR CT-J400WR AND CT-J300WR

- View from soldering side


6
5
4
3
2
A
B
C
D
1 MEC
2 ME
OPE
MAIN UNIT
TRANSISTOR UNIT
DISPLAY UNIT
TO AMPLIFIER
POWER SUPPLY
REC AMP
BIAS OSC
PB AMP
DECK1 PB Adj.
DECK2 PB Adj.
REC VOL
LINE MUTE
MS
DOLBY B/C
AUTO BLE
METER AMP
INTERFACE
TEST MODE
RESET
DECK1 TAPE SPEED Adj.
DECK2 TAPE SPEED Adj.
BLE OSC. Adj.
2MECHA CONT
1MECHA CONT
RWZ2405
RWZ2576
RNZ2154
RWZ2408
RWZ2575
RNZ2158
PNP1396-C
PNP1397-A
1 MECHA UNIT(2/2) (RYM1162)
HALF
GND
MODE

- View from component side


MAIN UNIT
TRANSISTOR UNIT
DISPLAY UNIT
RWZ2400 For 400
RWZ2575 For 300
RNZ2158
PNP1397-A
TO AMPLIFIER
POWER SUPPLY
REC VOL
PB AMP
LINE MUTE
MS
DECK1 PB Adj
DECK2 PB Adj
REC AMP
BIAS OSC
DOLBY B/C
CT-J300WR ONLY
CT-J400WR ONLY
LINE MUTE OFF(-5V)
INTERFACE
RESET
TEST MODE
METER AMP
AUTO BLE
ONLY 400
DECK1 TAPE SPEED Adj.
DECK2 TAPE SPEED Adj.
X1 Adj.
X2 Adj.
[10KHz][400Hz]
BLE OSC. Adj. (ONLY 400)
RWZ2405 For 400
RWZ2576 For 300
RNZ2154
1MECHA CONT
2MECHA CONT
PNP1396-C
1 MECHA UNIT(2/2) (RYM1162)
Cr
MODE
GND
HALF
SOL
OUT
12 11 10 9 8 7 6 5 4 3 2 1
1 MEC
2 MEC
OPER
REC R
VR802
VR103 VR104
VR101 VR102
VR1502 VR1501
VR301 VR302
VR852 VR851
VR601
VR602
IC1002
IC1003
Q704 Q702 Q703
Q701
IC701
Q705 IC702
Q859
Q901
Q902 Q951
Q953 Q952 Q903
Q804 Q805
Q807 Q802 Q803
Q905 Q906 Q907 Q908
Q909
IC901
Q101
Q103 Q105 Q104 Q106 Q102
Q709 Q708 Q707
IC753
Q757
IC752
IC751
Q114
IC101
Q111 Q112 Q113
Q116 Q115
IC201
Q201
Q202
Q758
IC1505
IC1503
IC1501
Q109
Q107 Q110 Q108
Q311
Q301 Q302
Q604
Q601 Q602
IC301
IC302
Q313
Q314
IC601
Q402
Q403 Q401
Q404 Q405
Q406 Q407
IC1502
Q1522
Q1521 Q1502 Q1501
Q852 Q853
Q854 Q855
Q857
Q1511 Q1513 Q1515 Q1517
Q1510 Q1512 Q1514 Q1516
Q1508 Q1507 Q1506 Q1505
Q1503 Q1504
A
B
C
D
1 2 3 4 5 6
12


DECK1 PB Adj.
DECK2 PB Adj.
REC VOL
PB-AMP
LINE MUTE
MS
REC Adj.
1400WR ONLY
TP1
DOL. L
DOL. R
TP2
REC AMP
BIAS OSC
CT-J300WR ONLY
LINE MUTE OFF (5V)
CT-J400WR ONLY
DOLBY B/C
TP11
METER AMP
AUTO BLE
(ONLY 400)
X1Adj.
X2Adj.
DECK2 TAPE SPEED Adj.
RWZ2405 For 400
RWZ2576 For 300
RNZ2154
[10KHz] [400Hz]
CT-J400WR ONLY
BLE OSC. Adj. (ONLY 400)
2MECHA CONT
CN903
1 MECHA UNIT(1/2)
Lch
PB HEAD
Rch
2 MECHA UNIT(1/2)
Lch
REC/PB HEAD
Rch
ERASE HEAD
2 MECHA UNIT(2/2) (RYM1163)
REC.R
MET
Cr
MODE
GND
HALF
SOL
REC.F
14 13 12 11 10 9 8 7 6 5 4 3 2 1
OUTO
OPERATE 1 UNIT
DECK-1
RWZ2407
RNZ2159
S1302
S1303
S1301
S1305
S1306
REV
STOP
FWD
FF
REV
MODE
J002
OPERATE 2 UNIT
DECK 2
RWZ2408
RNZ2160
S1405
S1406
S1402
S1403
S1401
REV
FF
DOLBY NR
REV
STOP
FWD
VR103 VR104
VR101 VR102
VR1502 VR1501
VR301 VR302
VR852 VR851
VR601
VR602
IC701
Q101
Q103 Q105Q104Q106 Q102
Q705 IC702
Q709 Q708 Q707
Q859
Q909
IC753
Q757
IC752
IC901
908
IC101
Q111
Q114
IC201
Q112 Q113
Q116 Q115
IC751
Q758
Q109
Q107 Q110 Q108
Q201
Q202
IC1505
IC1503
IC1501
Q311
Q301 Q302
Q604
Q601 Q602
Q403
Q402
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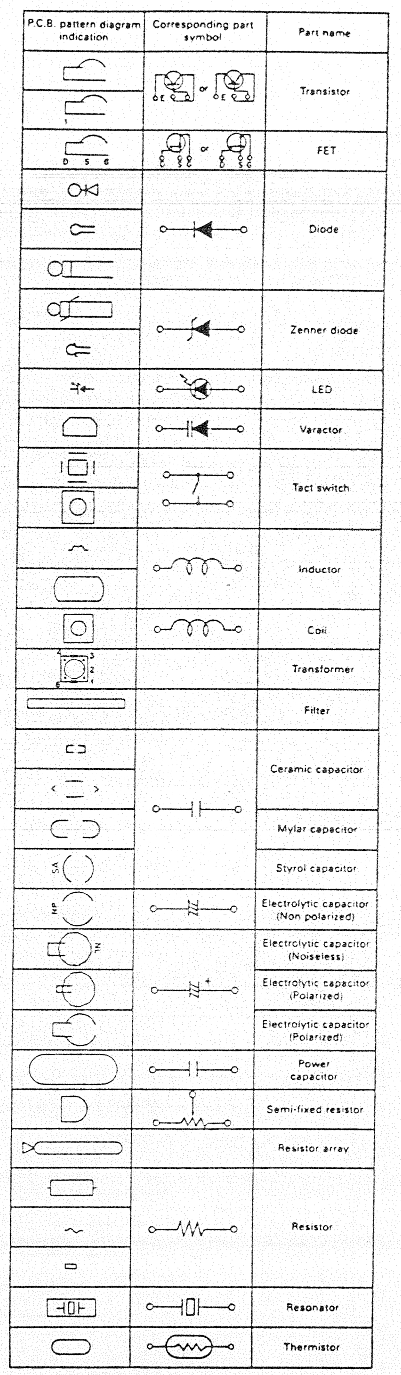
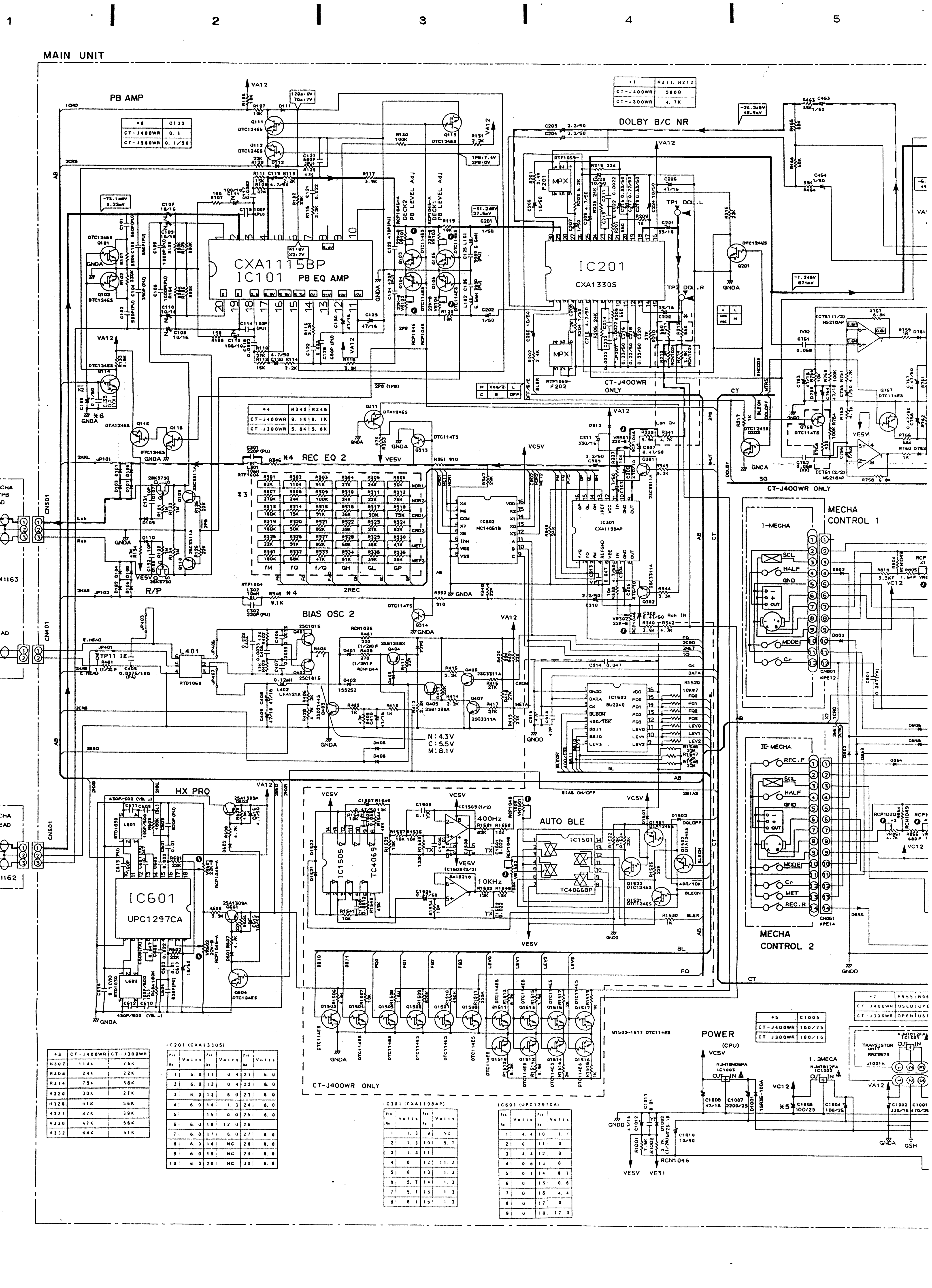
Q404 Q405
Q406 Q407
IC1502
Q1522
Q1521Q1502 Q1501
Q857
Q852 Q853
Q854 Q855
IC301
IC302
Q313
Q314
IC601
Q1511 Q1513 Q1515 Q1517
Q1510 Q1512 Q1514 Q1516
Q1508 Q1507 Q1506 Q1505
Q1503 Q1504



P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

MAIN UNIT


1
2
3
4
5
PB AMP
CXA1115BP
IC101 PB EQ AMP
DOLBY B/C NR
IC201
CXA1330S
REC EQ 2
IC302
MC14051B
IC301
CXA1198AP
BIAS OSC 2
N: 4.3V
C: 5.5V
M: 8.1V
HX PRO
IC601
UPC1297CA
AUTO BLE
IC1505
TC4069
IC1501
TC4066BP
IC1502
BU2040
400Hz
10KHz
CT-J400WR ONLY
II-MECHA REC/PB HEAD
RYM1163
E.HEAD
I-MECHA PB.HEAD
RYM1162
CN301
CN401
CN501
R/P
MECHA CONTROL 1
MECHA CONTROL 2
I-MECHA
II-MECHA
SOL
HALF
GND
MODE
Cr
MET
REC.F
REC.R
POWER
TRANSISTOR UNIT
RWZ2573
1.2MECA
VA12
VC12
VE5V
VC5V
GNDA
GNDD
TP1 DOL.L
TP2 DOL.R
DECK2 PB LEVEL Adj
DECK1 PB LEVEL Adj
Q1503~1517 DTC114ES

*6	C133
CT-J400WR	0.1
CT-J300WR	0.1/50

*1	R211, R212
CT-J400WR	560Ω
CT-J300WR	4.7K

*4	R345	R346
CT-J400WR	9.1K	9.1K
CT-J300WR	5.6K	5.6K

*5	C1005
CT-J400WR	100/25
CT-J300WR	100/16

*2	R955	R96
CT-J400WR	USED	OPE
CT-J300WR	OPEN	USE

*3	CT-J400WR	CT-J300WR
R302	110K	75K
R308	24K	22K
R314	75K	56K
R320	30K	27K
R326	91K	56K
R327	82K	39K
R330	47K	56K
R332	68K	51K

IC201 (CXA1330S)

Pin No	Volts	Pin No	Volts	Pin No	Volts
1	6.0	11	0.4	21	6.0
2	6.0	12	0.4	22	6.0
3	6.0	13	6.0	23	6.0
4	6.0	14	1.3	24	6.0
5		15	0.0	25	6.0
6	6.0	16	12.0	26	
7	6.0	17	6.0	27	6.0
8	6.0	18	NC	28	6.0
9	6.0	19	NC	29	6.0
10	6.0	20	NC	30	6.0

IC301 (CXA1198AP)

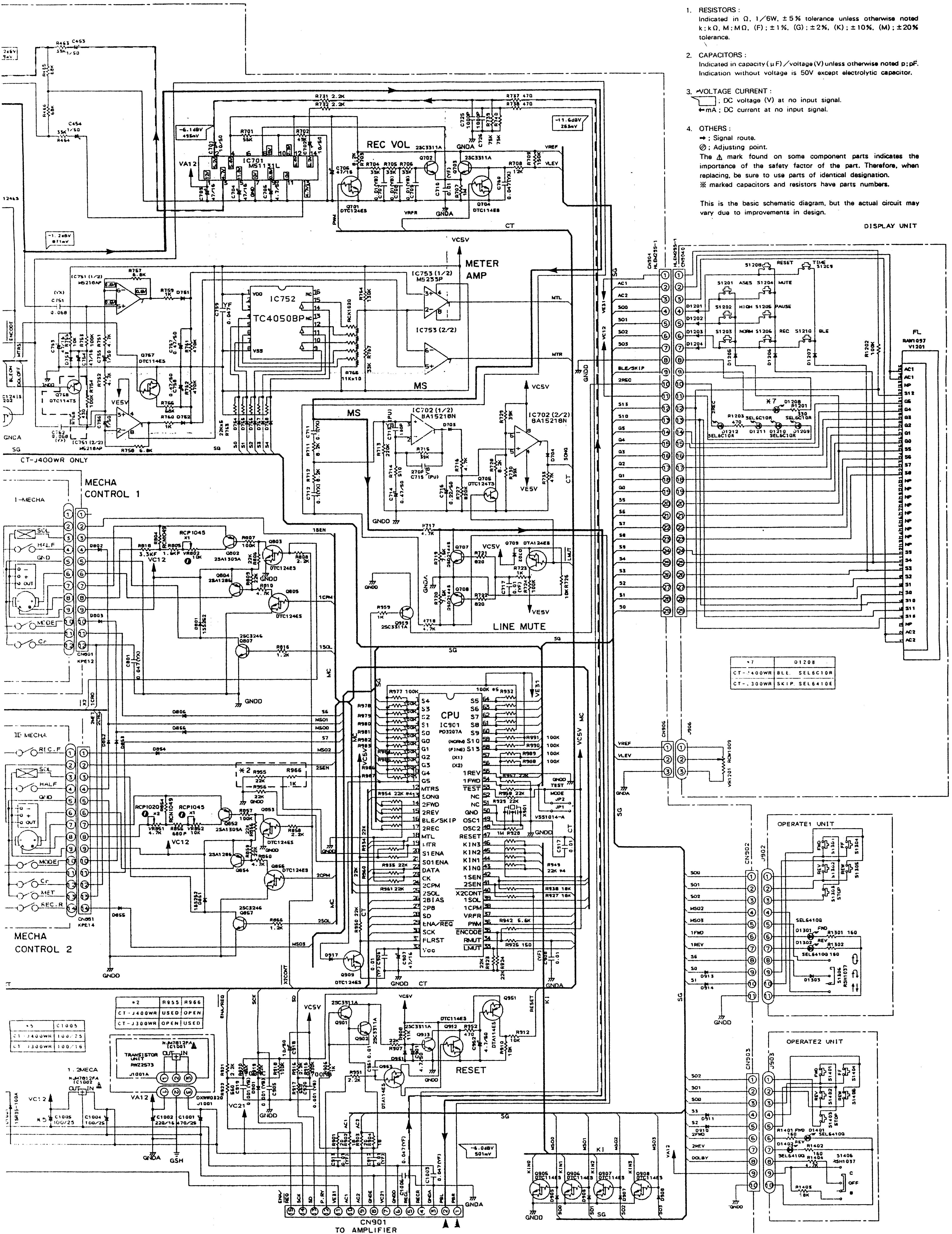
Pin No	Volts	Pin No	Volts
1	1.3	9	NC
2	1.3	10	5.7
3	1.3	11	
4	0	12	11.2
5	0	13	1.3
6	5.7	14	1.3
7	5.7	15	1.3
8	6.1	16	1.3

IC601 (UPC1297CA)

Pin No	Volts	Pin No	Volts
1	4.4	10	1.7
2	0	11	0
3	4.4	12	0
4	0.6	13	0
5	0.1	14	0.1
6	0	15	0.6
7	0	16	4.4
8	0	17	0
9	0	18	12.0

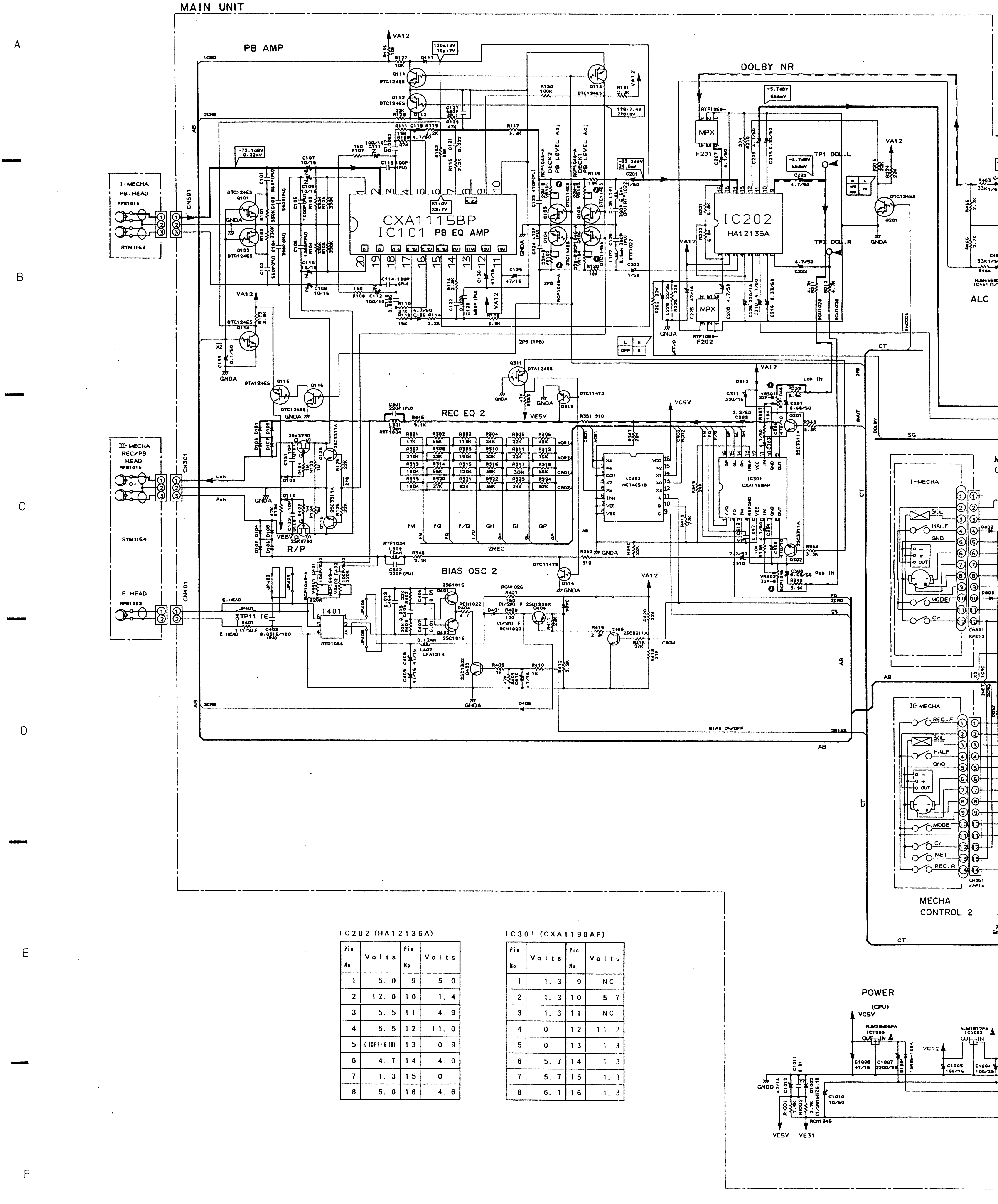
1. RESISTORS :
   Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.
2. CAPACITORS :
   Indicated in capacity (μF)/voltage (V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT :
   ☐ ; DC voltage (V) at no input signal.
   ←mA ; DC current at no input signal.
4. OTHERS :
   ➡ ; Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.


DISPLAY UNIT
REC VOL
IC701 M51131L
METER AMP
IC753 (1/2) M5235P
IC753 (2/2)
IC752 TC4050BP
IC751 (1/2) M5218AP
IC751 (2/2) M5218AP
IC702 (1/2) BA15218N
IC702 (2/2) BA15218N
MS
CT-J400WR ONLY
MECHA CONTROL 1
MECHA CONTROL 2
I-MECHA
II-MECHA
LINE MUTE
CPU IC901 PD3207A
RESET
FL
OPERATE1 UNIT
OPERATE2 UNIT
CN901 TO AMPLIFIER (Connect to the pheschibed components)
TRANSISTOR UNIT RWZ2573
*7 | D1208
CT-J400WR | BLE SEL6C10R
CT-J300WR | SKIP SEL6410E
*2 | R955 | R966
CT-J400WR | USED | OPEN
CT-J300WR | OPEN | USED
*5 | C1005
CT-J400WR | 100/25
CT-J300WR | 100/16

——— : PLAYBACK SIGNAL
– – – – : RECORDING SIGNAL
➤ : MEASURMENT POINT

3.2 FOR CT-J200WR


2
3
4
5
A
B
C
D
E
F
MAIN UNIT
PB AMP
DOLBY NR
REC EQ 2
BIAS OSC 2
ALC
R/P
I-MECHA PB. HEAD
RPB1016
RYM1162
II-MECHA REC/PB HEAD
RPB1016
RYM1164
E. HEAD
RPB1002
CN501
CN301
CN401
CXA1115BP
IC101 PB EQ AMP
IC202
HA12136A
MPX
F201
F202
IC302 MC14051B
IC301 CXA1198AP
T401
RTD1066
DECK2 PB LEVEL Adj
DECK1 PB LEVEL Adj
TP1 DOL.L
TP2 DOL.R
VA12
VE5V
VC5V
GNDA
Lch
Rch
fM
fQ
f/Q
GH
GL
GP
2REC
BIAS ON/OFF
I-MECHA
II-MECHA
SOL
HALF
GND
MODE
Cr
REC.F
MET
REC.R
CN801 KPE12
CN851 KPE14
MECHA CONTROL 2
POWER
(CPU)
IC1003
IC1002
VE5V
VE31
GNDD

IC202 (HA12136A)

Pin No.	Volts	Pin No.	Volts
1	5.0	9	5.0
2	12.0	10	1.4
3	5.5	11	4.9
4	5.5	12	11.0
5	0 (OFF) 6 (B)	13	0.9
6	4.7	14	4.0
7	1.3	15	0
8	5.0	16	4.6

IC301 (CXA1198AP)

Pin No.	Volts	Pin No.	Volts
1	1.3	9	NC
2	1.3	10	5.7
3	1.3	11	NC
4	0	12	11.2
5	0	13	1.3
6	5.7	14	1.3
7	5.7	15	1.3
8	6.1	16	1.2

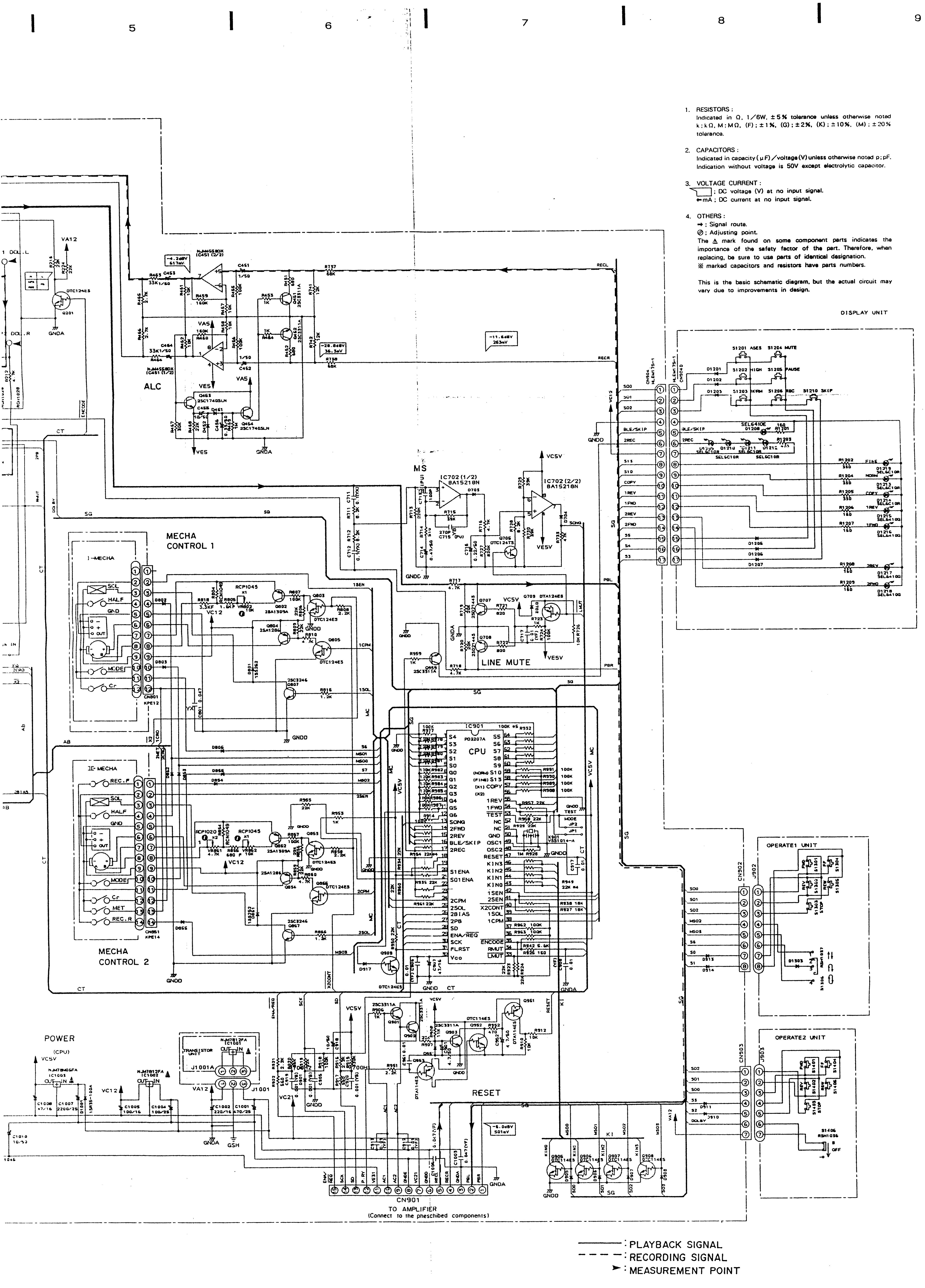
1. RESISTORS :
   Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.

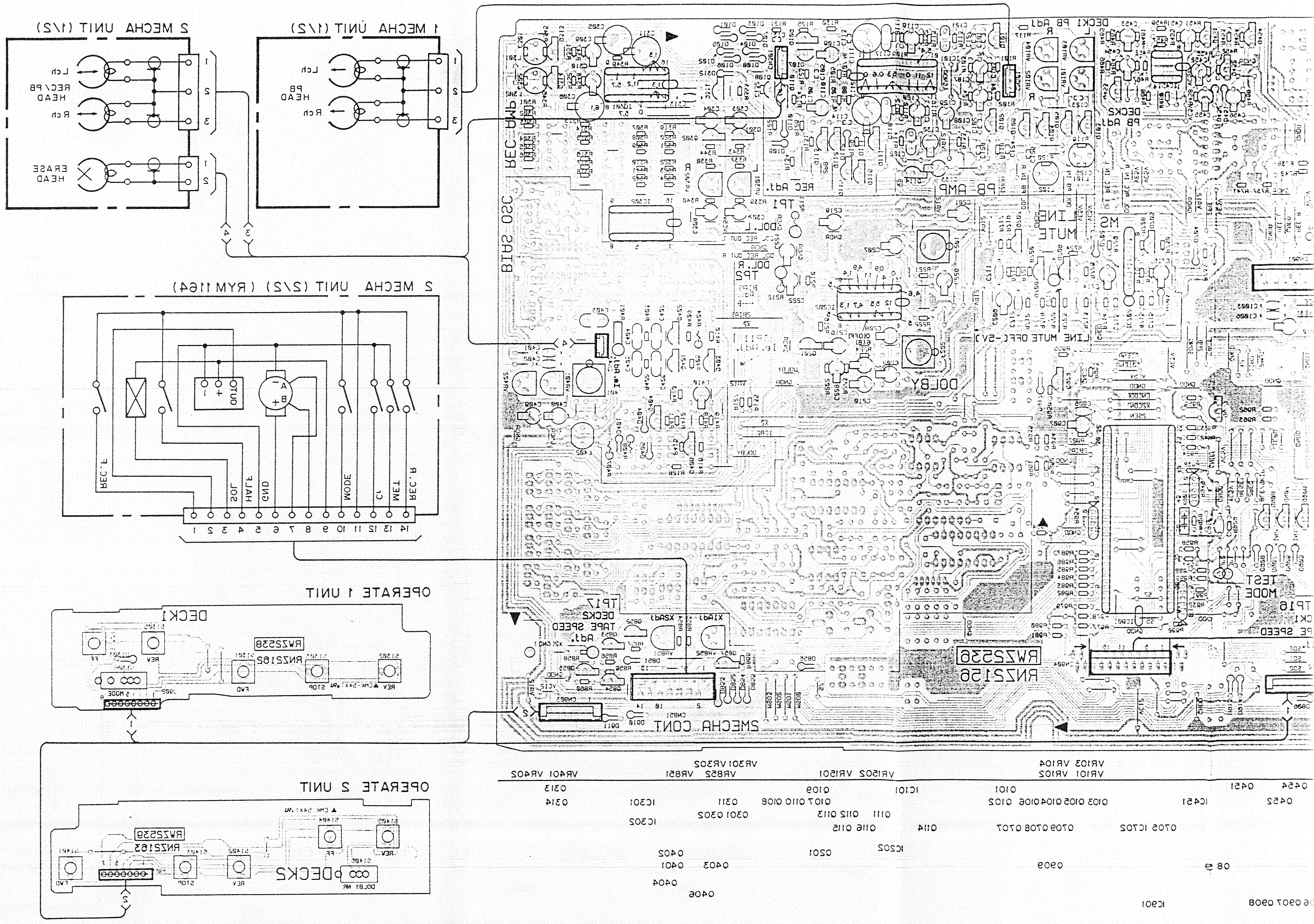
2. CAPACITORS :
   Indicated in capacity (μF) / voltage (V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT :
   ⌐▭ ; DC voltage (V) at no input signal.
   ←mA ; DC current at no input signal.

4. OTHERS :
   → ; Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.


5
6
7
8
9
ALC
MS
LINE MUTE
MECHA CONTROL 1
MECHA CONTROL 2
I-MECHA
II-MECHA
IC901
CPU
P03207A
RESET
POWER
(CPU)
DISPLAY UNIT
OPERATE1 UNIT
OPERATE2 UNIT
CN901
TO AMPLIFIER
(Connect to the phescribed components)
CN902
J902
CN903
J903
IC702 (1/2) BA15218N
IC702 (2/2) BA15218N
NJM4558DX IC451 (2/2)
NJM4558DX IC451 (1/2)
NJM7812FA IC1001
NJM7812FA IC1002
NJM78M05FA IC1003
TRANSISTOR UNIT
J1001A
J1001
VC5V
VC12
VA12
VA5
VE5
VE5V
GNDA
GNDD
GSH
SG
CT
PBL
PBR
RECL
RECR
-4.2dBV 617mV
-11.6dBV 263mV
-28.8dBV 36.3mV
-6.0dBV 501mV
KPE12
KPE14
CN801
CN851
SOL
HALF
GND
MODE
Cr
MET
REC.F
REC.R
S1201 ASES
S1204 MUTE
S1202 HIGH
S1205 PAUSE
S1203 NORM
S1206 REC
S1210 SKIP
SEL6410E
BLE/SKIP
2REC
S500
S01
S02
S15
S10
COPY
1REV
1FWD
2REV
2FWD
S5
S4
S3
—— : PLAYBACK SIGNAL
- - - : RECORDING SIGNAL
➤ : MEASUREMENT POINT


2 MECHA UNIT (1/2)
1 MECHA UNIT (1/2)
Lch
Rch
REC/PB HEAD
PB HEAD
ERASE HEAD
2 MECHA UNIT (2/2) (RYM1164)
REC.F
SOL
HALF
GND
MODE
C
MET
REC.R
OPERATE 1 UNIT
DECK1
RWZ2538
RNZ2182
FF
REV
FWD
STOP
MODE
OPERATE 2 UNIT
DECK2
RWZ2539
RNZ2163
DOLBY NR
BIAS OSC
REC AMP
REC Adj.
PB AMP
DECK1 PB Adj.
DECK2 PB Adj.
LINE MUTE
MS MUTE
DOLBY
LINE MUTE OFF(-5V)
DOL.L
DOL.R
TP1
TP2
DECK2 TAPE SPEED Adj.
TP17
TEST MODE
TP16
TAPE SPEED
RWZ2536
RNZ2156
2MECHA CONT

VR103 VR104
VR101 VR102

VR301 VR302
VR852 VR851

VR1502 VR1501

VR401 VR402

Q454 Q451 Q452

IC451

Q101
Q103 Q105 Q104 Q106 Q102

IC101

Q109
Q107 Q110 Q108
Q111 Q112 Q113
Q116 Q115
Q114
IC202
Q201

Q311
Q301 Q302

IC301
IC302

Q313
Q314

Q402
Q401 Q403
Q404
Q406

Q709 Q708 Q707
Q705 IC702

Q909
Q8
IC901
Q906 Q907 Q908

Q852 Q853
Q854 Q855
Q857

A

B

C

D

9

8

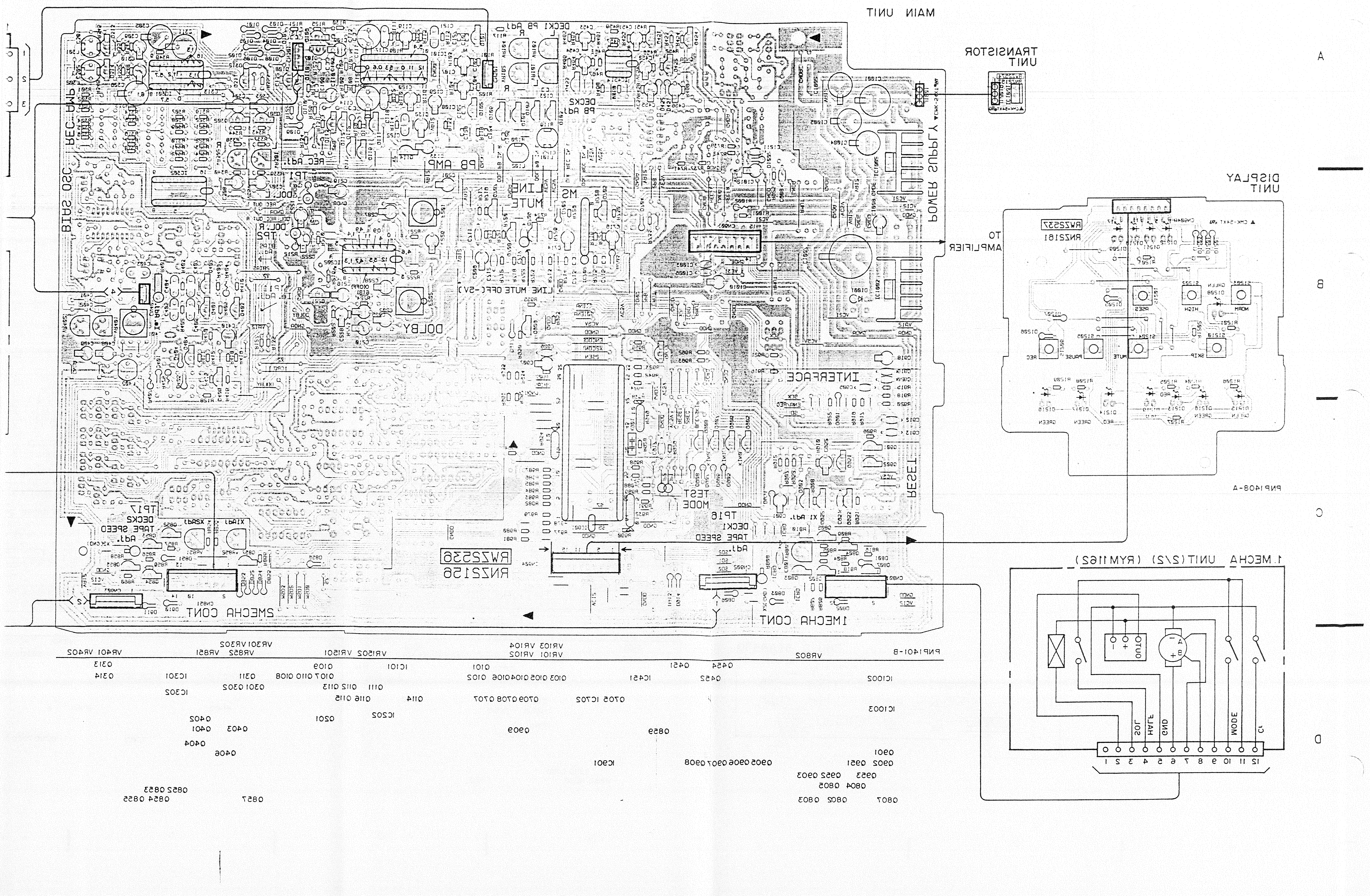
7

6

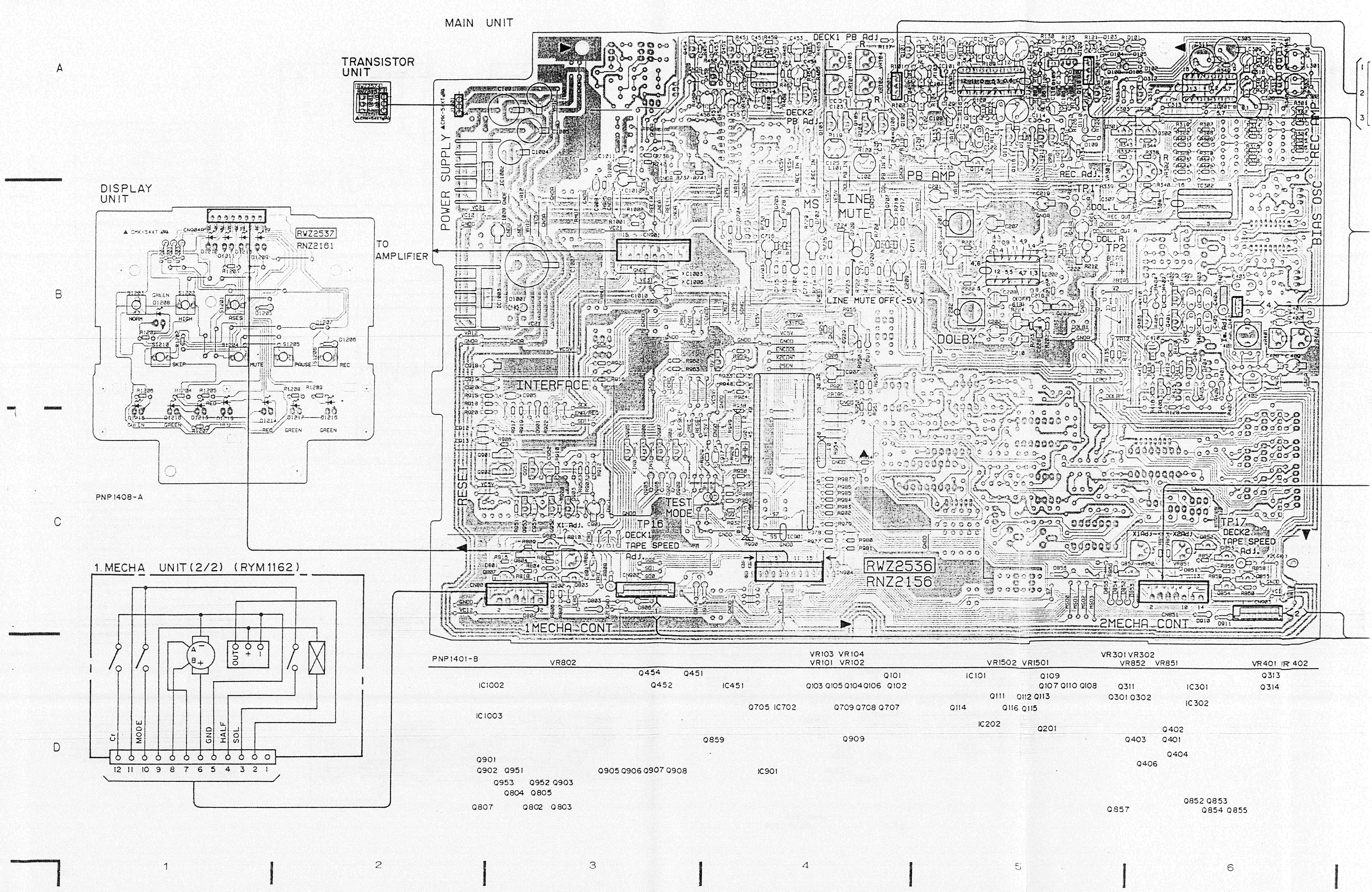
5

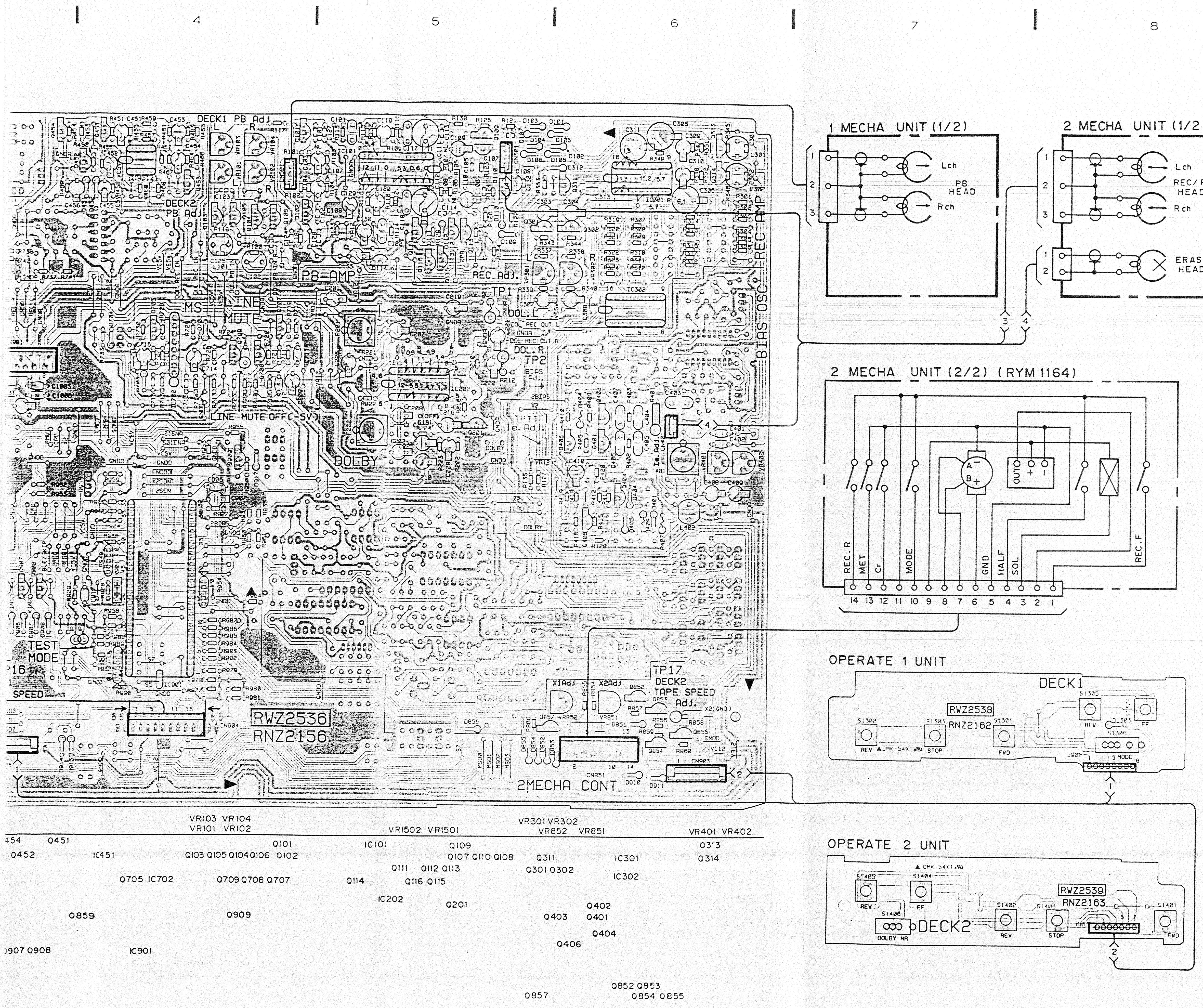
4

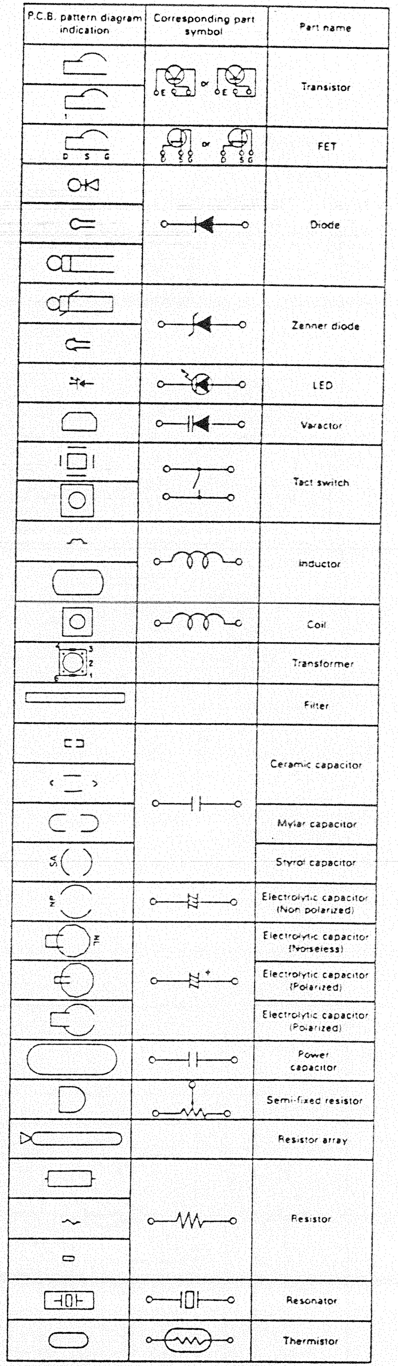
• View from soldering side


MAIN UNIT
TRANSISTOR UNIT
DISPLAY UNIT
TO AMPLIFIER
POWER SUPPLY
REC AMP
BIAS OSC
PB AMP
LINE MUTE
MS
DOLBY
INTERFACE
RESET
TEST MODE
DECK1 PB Adj.
DECK2 PB Adj.
DECK1 TAPE SPEED Adj.
DECK2 TAPE SPEED Adj.
2MECHA CONT
1MECHA CONT
RWZ2536
RNZ2156
RWZ2537
RNZ2161
PNP1408-A
PNP1401-B
1.MECHA UNIT(2/2) (RYM1162)
SOL
HALF
GND
MODE
A
B
C
D

- View from component side


A
B
C
D
1
2
3
4
5
6
MAIN UNIT
TRANSISTOR UNIT
DISPLAY UNIT
RWZ2537
RNZ2161
TO AMPLIFIER
NORM
HIGH
ASES
SKIP
MUTE
PAUSE
REC
GREEN
RED
PNP1408-A
1.MECHA UNIT(2/2) (RYM1162)
Cr
MODE
GND
HALF
SOL
OUTO
12 11 10 9 8 7 6 5 4 3 2 1
POWER SUPPLY
DECK1 PB Adj
DECK2 PB Adj
PB AMP
REC Adj
REC AMP
BIAS OSC
MS
LINE MUTE
LINE MUTE OFF(-5V)
DOLBY
TP1 DOL.L
TP2 DOL.R
INTERFACE
RESET
TEST MODE
TP16 DECK1 TAPE SPEED Adj.
X1 Adj.
TP17 DECK2 TAPE SPEED Adj.
X1Adj. X2Adj.
RWZ2536
RNZ2156
1MECHA CONT
2MECHA CONT
PNP1401-B
VR802
VR103 VR104
VR101 VR102
VR1502 VR1501
VR301 VR302
VR852 VR851
VR401 VR402
Q454 Q451
Q452
IC451
IC1002
IC1003
Q101
Q103 Q105 Q104 Q106 Q102
IC101
Q109
Q107 Q110 Q108
Q111 Q112 Q113
Q116 Q115
Q114
Q311
Q301 Q302
IC301
IC302
Q313
Q314
Q705 IC702
Q709 Q708 Q707
IC202
Q201
Q402
Q403 Q401
Q404
Q406
Q859
Q909
Q901
Q902 Q951
Q953 Q952 Q903
Q804 Q805
Q807 Q802 Q803
Q905 Q906 Q907 Q908
IC901
Q857
Q852 Q853
Q854 Q855


4
5
6
7
8
A
B
C
D
DECK1 PB Adj.
DECK2 PB Adj.
PB-AMP
REC. Adj.
TP1
DOL. L
DOL. R
TP2
BIAS Adj.
MS
LINE
MUTE
LINE-MUTE OFF(C-5V)
DOLBY
REC AMP
BIAS OSC
TEST MODE
SPEED
RWZ2536
RNZ2156
TP17
DECK2
TAPE SPEED
Adj.
X1Adj
X2Adj
CN851
CN903
2MECHA CONT
1 MECHA UNIT (1/2)
Lch
PB HEAD
Rch
2 MECHA UNIT (1/2)
Lch
REC/PB HEAD
Rch
ERASE HEAD
2 MECHA UNIT (2/2) (RYM1164)
OUTO
REC. R
MET
Cr
MODE
GND
HALF
SOL
REC. F
14 13 12 11 10 9 8 7 6 5 4 3 2 1
OPERATE 1 UNIT
DECK1
RWZ2538
RNZ2162
S1302 REV
S1303 STOP
S1301 FWD
S1305 REV
S1304 FF
J902
MODE
OPERATE 2 UNIT
S1405 REV
S1404 FF
S1406 DOLBY NR
DECK2
RWZ2539
RNZ2163
S1402 REV
S1403 STOP
S1401 FWD
VR103 VR104
VR101 VR102
VR1502 VR1501
VR301 VR302
VR852 VR851
VR401 VR402
454 Q451
Q452
IC451
Q101
Q103 Q105 Q104 Q106 Q102
IC101
Q109
Q107 Q110 Q108
Q311
IC301
Q313
Q314
Q111 Q112 Q113
Q301 Q302
IC302
Q705 IC702
Q709 Q708 Q707
Q114
Q116 Q115
IC202
Q201
Q402
Q403 Q401
Q404
Q406
Q859
Q909
907 Q908
IC901
Q857
Q852 Q853
Q854 Q855

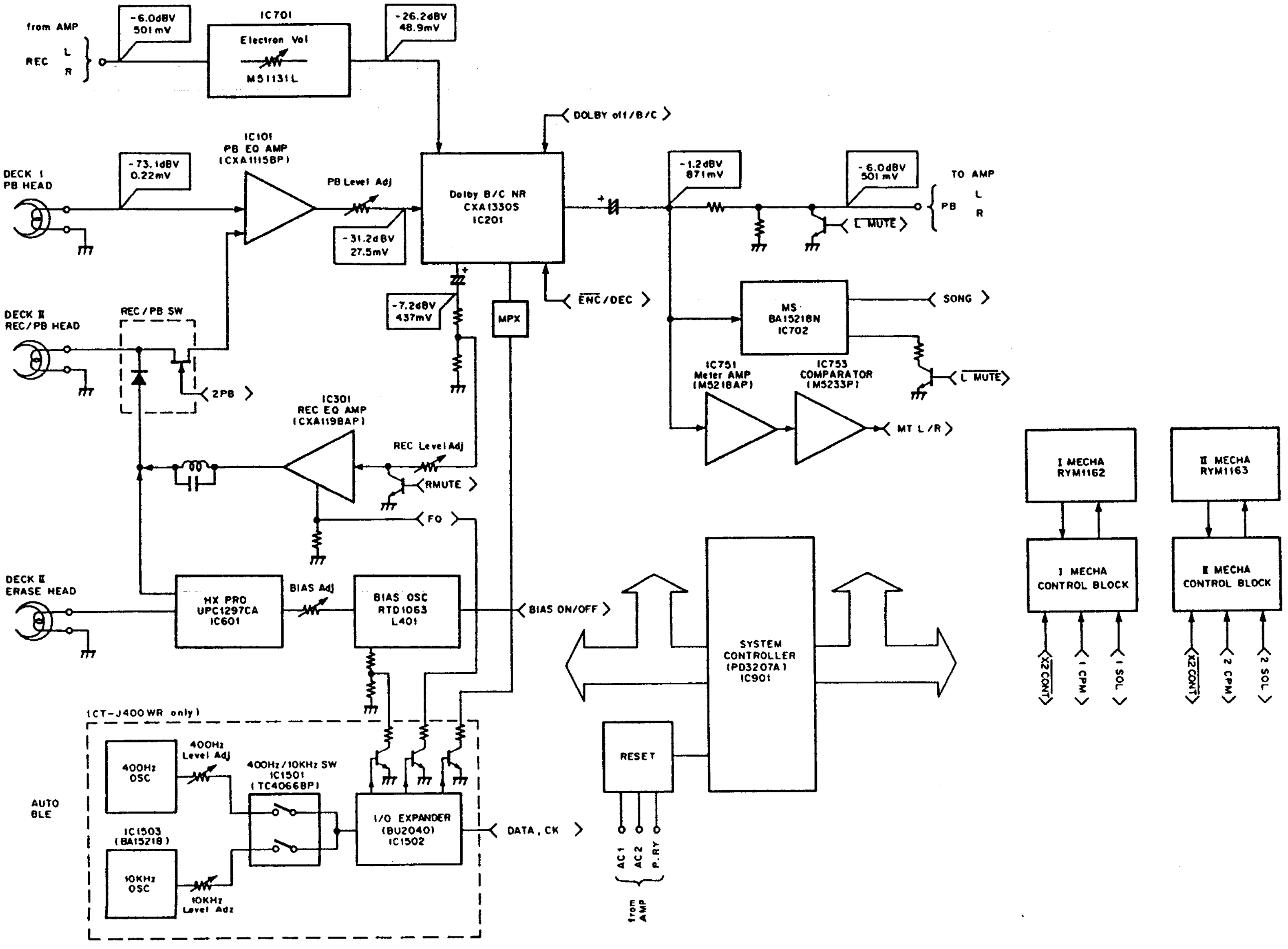


P.C.B. pattern diagram indication	Corresponding part symbol	Part name
	E or E	Transistor
D S G	D S G or D S G	FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
SA		Styrol capacitor
NP		Electrolytic capacitor (Non polarized)
NL		Electrolytic capacitor (Noiseless)
	+	Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

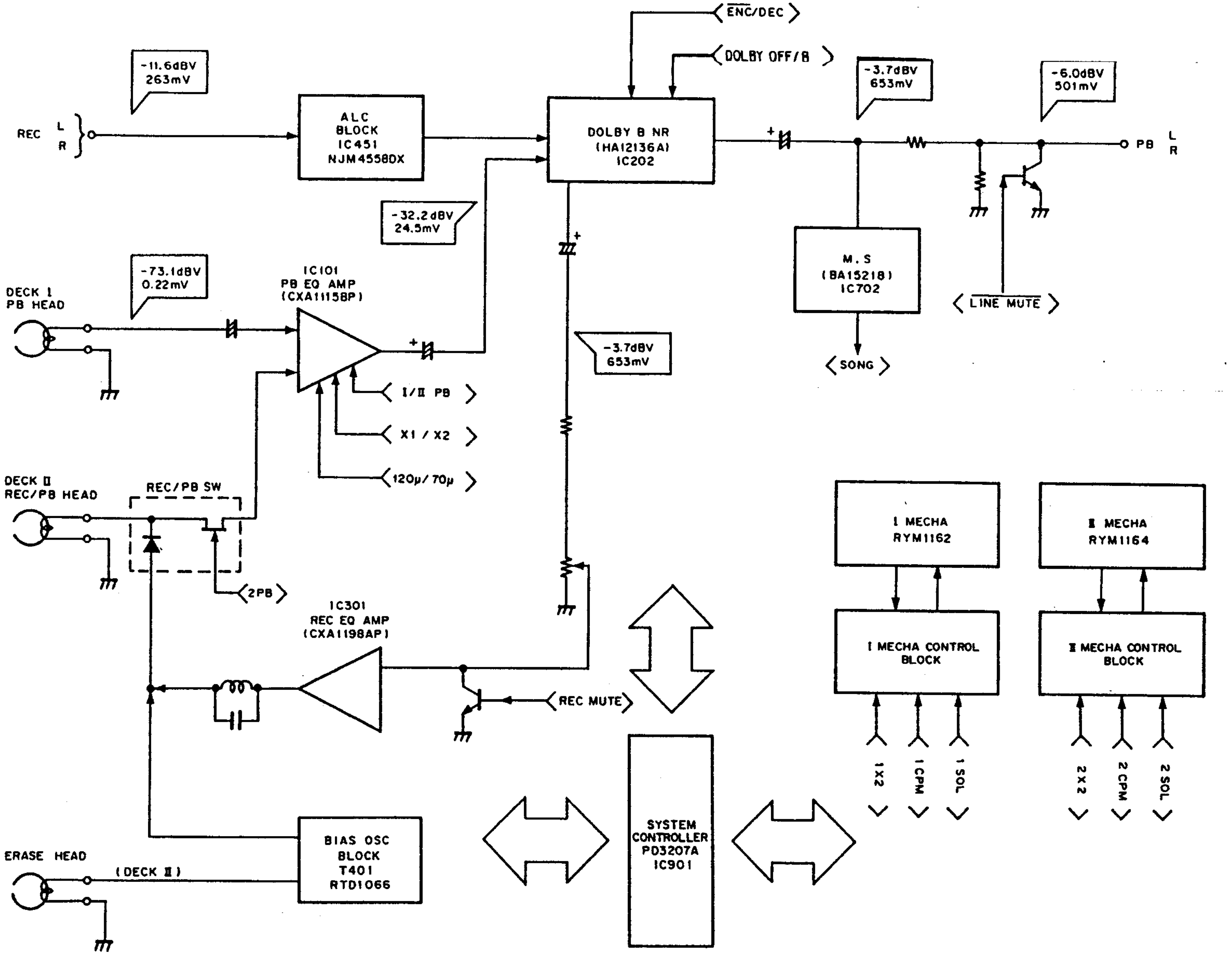
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

4. BLOCK DIAGRAM

4.1 FOR CT-J400WR AND CT-J300WR


from AMP
REC L R
-6.0dBV 501mV
IC701
Electron Vol
M51131L
-26.2dBV 48.9mV
DOLBY off/B/C
DECK I PB HEAD
-73.1dBV 0.22mV
IC101 PB EQ AMP (CXA1115BP)
PB Level Adj
-31.2dBV 27.5mV
Dolby B/C NR CXA1330S IC201
-1.2dBV 871mV
-6.0dBV 501mV
TO AMP PB L R
L MUTE
DECK II REC/PB HEAD
REC/PB SW
2PB
-7.2dBV 437mV
MPX
ENC/DEC
MS BA15218N IC702
SONG
L MUTE
IC751 Meter AMP (M5218AP)
IC753 COMPARATOR (M5233P)
MT L/R
IC301 REC EQ AMP (CXA1198AP)
REC Level Adj
RMUTE
FO
I MECHA RYM1162
II MECHA RYM1163
I MECHA CONTROL BLOCK
II MECHA CONTROL BLOCK
X2 CONT
1 CPM
1 SOL
X2 CONT
2 CPM
2 SOL
DECK II ERASE HEAD
HX PRO UPC1297CA IC601
BIAS Adj
BIAS OSC RTD1063 L401
BIAS ON/OFF
SYSTEM CONTROLLER (PD3207A) IC901
(CT-J400WR only)
AUTO BLE
400Hz OSC
400Hz Level Adj
400Hz/10KHz SW IC1501 (TC4066BP)
I/O EXPANDER (BU2040) IC1502
DATA, CK
IC1503 (BA15218)
10KHz OSC
10KHz Level Adz
RESET
AC1 AC2 P.RY
from AMP

4.2 FOR CT-J200WR


-11.6dBV
263mV
REC L R
ALC
BLOCK
IC451
NJM4558DX
ENC/DEC
DOLBY OFF/B
DOLBY B NR
(HA12136A)
IC202
-3.7dBV
653mV
-6.0dBV
501mV
PB L R
-32.2dBV
24.5mV
-73.1dBV
0.22mV
DECK I
PB HEAD
IC101
PB EQ AMP
(CXA1115BP)
I/II PB
X1 / X2
120μ/70μ
M.S
(BA15218)
IC702
SONG
LINE MUTE
-3.7dBV
653mV
DECK II
REC/PB HEAD
REC/PB SW
2PB
IC301
REC EQ AMP
(CXA1198AP)
REC MUTE
I MECHA
RYM1162
II MECHA
RYM1164
I MECHA CONTROL
BLOCK
II MECHA CONTROL
BLOCK
1X2
1CPM
1SOL
2X2
2CPM
2SOL
ERASE HEAD
(DECK II)
BIAS OSC
BLOCK
T401
RTD1066
SYSTEM
CONTROLLER
PD3207A
IC901

5. PCB PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%)

560 Ω → 56 × 10^1 → 561 ································ RD1/4PS $\boxed{5}\boxed{6}\boxed{1}$J
47k Ω → 47 × 10^3 → 473 ································ RD1/4PS $\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω → 0R5 ································ RN2H $\boxed{0}\boxed{R}\boxed{5}$K
1 Ω → 010 ································ RS1P $\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ································ RN1/4SR $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

5.1 FOR CT-J400WR AND CT-J300WR

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
⊙		MOTHER UNIT (CT-J400WR)	RWM1433
⊙		MOTHER UNIT (CT-J300WR)	RWM1488

- MAIN UNIT
- TRANSISTOR UNIT

Mark	No.	Description	Part No.
⊙		SUB UNIT (CT-J400WR)	RWM1444
⊙		SUB UNIT (CT-J300WR)	RWM1495

- OPERATE 1 UNIT
- OPERATE 2 UNIT
- DISPLAY UNIT

MAIN UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC101	PB-EQ AMP IC	CXA1115BP
	IC201	DOLBY B/C IC	CXA1330S
	IC301	REC EQUALIZER IC	CXA1198AP
	IC302	LOGIC IC	TC4051BP
	IC601	DOLBY HX PRO IC	UPC1297CA
	IC701	VCA	M51131L
	IC702	IC	BA15218N
	IC751	OP-AMP, IC	M5218AP
	IC752	CMOS LOGIC IC	TC4050BP
	IC753	COMPARATOR	M5233P
	IC901	CPU(C-MOS)	PD3207A
⚠	IC1002	REGULATOR IC	NJM7812FA
⚠	IC1003	REGULATOR IC	NJM78M05FA
	IC1501	LOGIC IC	TC4066BP (CT-J400WR only)
	IC1502	LOGIC IC	BU2040 (CT-J400WR only)
	IC1503	OP-AMP IC	BA15218 (CT-J400WR only)
	IC1505	LOGIC IC	TC4069UBP (CT-J400WR only)
	Q101, 102	TRANSISTOR	XDC124ES
	Q103-106	DIGITAL TRANSISTOR	XDC114ES
	Q107, 108	N-FET	2SK373
	Q109, 110	TRANSISTOR	2SC3311A
	Q111-114	TRANSISTOR	XDC124ES
	Q115	TRANSISTOR	XDA124ES
	Q116	TRANSISTOR	XDC124ES
	Q201, 202	TRANSISTOR	XDC124ES
	Q301, 302	TRANSISTOR	2SC3311A
	Q311	TRANSISTOR	XDA124ES
	Q313, 314	DIGITAL TRANSISTOR	DTC114TS
	Q401, 402	TRANSISTOR	2SC1815
	Q403	TRANSISTOR	2SD2144S
	Q404, 405	TRANSISTOR	2SB1238X
	Q406, 407	TRANSISTOR	2SC3311A
	Q601, 602	TRANSISTOR	2SA1309A
	Q604	TRANSISTOR	XDC124ES
	Q701	TRANSISTOR	XDC124ES
	Q702, 703	TRANSISTOR	2SC3311A
	Q704	DIGITAL TRANSISTOR	XDC114ES
	Q705	TRANSISTOR	DTC124TS
	Q707, 708	TRANSISTOR	2SD2144S
	Q709	TRANSISTOR	XDA124ES
	Q757	DIGITAL TRANSISTOR	XDC114ES
	Q758	DIGITAL TRANSISTOR	DTC114TS (CT-J400WR only)
	Q802	TRANSISTOR	2SA1309A
	Q803	TRANSISTOR	XDC124ES
	Q804	TRANSISTOR	2SA1286
	Q805	TRANSISTOR	XDC124ES
	Q807	TRANSISTOR	2SC3246
	Q852	TRANSISTOR	2SA1309A
	Q853	TRANSISTOR	XDC124ES
	Q854	TRANSISTOR	2SA1286
	Q855	TRANSISTOR	XDC124ES
	Q857	TRANSISTOR	2SC3246
	Q901-903	TRANSISTOR	2SC3311A
	Q905-908	DIGITAL TRANSISTOR	XDC114ES
	Q909	TRANSISTOR	XDC124ES

Mark	No.	Description	Part No.
	Q951	DIGITAL TRANSISTOR	XDA114ES
	Q952	DIGITAL TRANSISTOR	XDC114ES
	Q953	DIGITAL TRANSISTOR	XDA114ES
	Q959	TRANSISTOR	2SC3311A
	Q1501, 1502	TRANSISTOR	XDA124ES (CT-J400WR only)
	Q1503-1508	DIGITAL TRANSISTOR	XDC114ES (CT-J400WR only)
	Q1510-1517	DIGITAL TRANSISTOR	XDC114ES (CT-J400WR only)
	Q1521, 1522	TRANSISTOR	XDC124ES (CT-J400WR only)
	D101-112	DIODE	1SS254
	D312	DIODE	1SS254
	D401	DIODE	1SS254
	D402	DIODE	1SS252
	D403-406	DIODE	1SS254
	D601, 602	DIODE	1SS254
	D702-704	DIODE	1SS254
	D751-758	DIODE	1SS254
	D801	DIODE	1SS252
	D802, 803	DIODE	1SS254
	D806	DIODE	1SS254
	D851	DIODE	1SS252
	D852-856	DIODE	1SS254
	D901	DIODE	1SS254
	D905-908	DIODE	1SS254
	D910, 911	DIODE	1SS254
	D913, 914	DIODE	1SS254
	D917	DIODE	1SS254
	D951	DIODE	1SS254
⚠	D1001	DIODE	1SR35-100AVL
⚠	D1002	ZENER DIODE	MTZ5.1B
	D1501, 1502	DIODE	1SS254 (CT-J400WR only)
	D1521, 1522	DIODE	1SS254 (CT-J400WR only)

COILS/TRANSFORMERS

Mark	No.	Description	Part No.
	L101, 102	COIL	RTF1022
	L301, 302	COIL	RTF1004
	L401	COIL	RTD1063
	L402	RADIAL INDUCTOR	LFA121K
	L601, 602	COIL	RTD1046
	F201, 202	FILTER	RTF1059

CAPACITORS

Mark	No.	Description	Part No.
	C101, 102	AXIAL CAPACITOR	CKPUYB561K50
	C103, 104	AXIAL CAPACITOR	CKPUYB391K50
	C105, 106	CERAMIC CAPACITOR	CKPUYB102K50
	C107-110	ELECTR. CAPACITOR	CEANL100M16
	C111, 112	ELECTR. CAPACITOR	CEANL101M10
	C113, 114	AXIAL CAPACITOR	CKPUYB101K50
	C117, 118	AUDIO FILM CAPACITOR	CFTXA822J50
	C119, 120	ELECTR. CAPACITOR	CEAS4R7M50
	C121, 122	AUDIO FILM CAPACITOR	CFTXA223J50
	C123, 124	AXIAL CAPACITOR	CKPUYB471K50
	C125, 126	AXIAL CAPACITOR	CKPUYB391K50
	C127, 128	AXIAL CAPACITOR	CKPUYB681K50
	C129, 130	ELECTR. CAPACITOR	CEAS470M16
	C131, 132	AXIAL CERAMIC C.	CCPUSL100J50
	C133	ELECTR. CAPACITOR	CEASR10M50 (CT-J300WR)
	C133	CERAMIC CAPACITOR	CGCYX104K25 (CT-J400WR)
	C201, 202	ELECTR. CAPACITOR	CEAS010M50
	C203, 204	ELECTR. CAPACITOR	CEAS2R2M50
	C205, 206	ELECTR. CAPACITOR	CEAS100M50
	C207, 208	ELECTR. CAPACITOR	CEAS010M50
	C209, 210	ELECTR. CAPACITOR	CEAS4R7M50
	C211-214	AUDIO FILM CAPACITOR	CFTXA222J50
	C215, 216	ELECTR. CAPACITOR	CEASR33M50
	C217, 218	ELECTR. CAPACITOR	CEASR22M50
	C219, 220	ELECTR. CAPACITOR	CEASR33M50
	C221, 222	ELECTR. CAPACITOR	CEAS330M16
	C223, 224	ELECTR. CAPACITOR	CEAS100M50
	C225	ELECTR. CAPACITOR	CEAS470M16
	C301, 302	AXIAL CAPACITOR	CKPUYB221K50
	C303, 304	ELECTR. CAPACITOR	CEAS4R7M50
	C305, 306	ELECTR. CAPACITOR	CEAS471M10
	C307, 308	ELECTR. CAPACITOR	CEASR47M50
	C309, 310	ELECTR. CAPACITOR	CEAS2R2M50
	C311	ELECTR. CAPACITOR	CEAS331M16
	C313	CERAMIC CAPACITOR	CKCYF473Z50
	C403	CAPACITOR	CQPA682J100
	C404	AUDIO FILM CAPACITOR	CFTXA223J50
	C405-407	AUDIO FILM CAPACITOR	CFTXA332J50
	C408-410	ELECTR. CAPACITOR	CEAS470M16
	C453, 454	ELECTR. CAPACITOR	CEAS010M50
	C601, 602	AUDIO FILM CAPACITOR	CFTXA103J50
	C603, 604	AXIAL CAPACITOR	CKPUYB821K50
	C605, 606	AUDIO FILM CAPACITOR	CFTXA223J50
	C607, 608	CERAMIC CAPACITOR	CGCYX473K25
	C609, 610	CERAMIC CAPACITOR	CCCSL101K500
	C611, 612	CERAMIC CAPACITOR	RCG1005
	C613	AXIAL CAPACITOR	CKPUYB101K50
	C614	CERAMIC CAPACITOR	CGCYX104M25
	C615	ELECTR. CAPACITOR	CEAS100M50
	C616	ELECTR. CAPACITOR	CEAS4R7M50
	C617	ELECTR. CAPACITOR	CEAS100M50
	C701, 702	ELECTR. CAPACITOR	CEAS100M50
	C703, 704	ELECTR. CAPACITOR	CEAS470M16
	C705	ELECTR. CAPACITOR	CEAS4R7M50
	C706	ELECTR. CAPACITOR	CEAS470M16
	C707-709	CERAMIC CAPACITOR	CKCYB103K50
	C710	CERAMIC CAPACITOR	CKCYF103Z50
	C711, 712	CERAMIC CAPACITOR	CGCYX104K25
	C713	AXIAL CAPACITOR	CKPUYB101K50
	C714	ELECTR. CAPACITOR	CEASR47M50
	C715	AXIAL CAPACITOR	CKPUYB271K50
	C716	ELECTR. CAPACITOR	CEASR22M50
	C717	CERAMIC CAPACITOR	CKCYF103Z50
	C725, 726	CERAMIC CAPACITOR	CKCYF102Z50 (CT-J300WR) CKCYB102K50 (CT-J400WR)
	C751, 752	CERAMIC CAPACITOR	CGCYX683K25
	C753, 754	ELECTR. CAPACITOR	CEAS470M16
	C755, 756	ELECTR. CAPACITOR	CEAS010M50
	C757, 758	ELECTR. CAPACITOR	CEASR47M50
	C759	CERAMIC CAPACITOR	CKCYF473Z50
	C760	CERAMIC CAPACITOR	CGCYX473K25
	C801	CERAMIC CAPACITOR	CGCYX473K25
	C901	ELECTR. CAPACITOR	CEAS4R7M50
	C905	CERAMIC CAPACITOR	CKCYB102K50
	C906	CERAMIC CAPACITOR	CKCYF103Z50
	C907	ELECTR. CAPACITOR	CEAS470M16
	C908	CERAMIC CAPACITOR	CKCYF103Z50
	C912, 913	CERAMIC CAPACITOR	CKCYF103Z50
	C914	CERAMIC CAPACITOR	CKCYF473Z50 (CT-J400WR only)
	C915, 916	CERAMIC CAPACITOR	CCCSL470J50 (CT-J400WR only)
	C917	CERAMIC CAPACITOR	CKCYF103Z50
	C918	ELECTR. CAPACITOR	CEAS100M50
	C919, 920	CERAMIC CAPACITOR	CKCYB102K50
	C951	CERAMIC CAPACITOR	CKCYF103Z50
	C952	ELECTR. CAPACITOR	CEAS4R7M50
	C1001	ELECTR. CAPACITOR	CEAS471M25
	C1002	ELECTR. CAPACITOR	CEAS221M16
	C1003	CERAMIC CAPACITOR	CKCYF473Z50
	C1004	ELECTR. CAPACITOR	CEAS101M25
	C1005	ELECTR. CAPACITOR	CEAS101M16 (CT-J300WR) CEAS101M25 (CT-J400WR)
	C1006	CERAMIC CAPACITOR	CKCYF473Z50
	C1007	ELECTR. CAPACITOR	CEAS222M25
	C1008	ELECTR. CAPACITOR	CEAS470M16
	C1010	ELECTR. CAPACITOR	CEAS100M50
	C1011	CERAMIC CAPACITOR	CKCYF103Z50
	C1012	ELECTR. CAPACITOR	CEAS470M16
	C1501, 1502	AUDIO FILM CAPACITOR	CFTXA223J50 (CT-J400WR only)
	C1503	CERAMIC CAPACITOR	CGCYX104K25 (CT-J400WR only)
	C1504	ELECTR. CAPACITOR	CEASR47M50 (CT-J400WR only)
	C1505	AUDIO FILM CAPACITOR	CFTXA103J50 (CT-J400WR only)
	C1506	AUDIO FILM CAPACITOR	CFTXA122J50 (CT-J400WR only)
	C1507	ELECTR. CAPACITOR	CEASR47M50 (CT-J400WR only)
	C1508	CERAMIC CAPACITOR	CKCYF103Z50 (CT-J400WR only)
	C1509	AUDIO FILM CAPACITOR	CFTXA333J50 (CT-J400WR only)
	C1510	CERAMIC CAPACITOR	[illegible] (CT-J400WR only)

RESISTORS

Mark	No.	Description	Part No.
	R101-135	CARBONFILM RESISTOR	RD1/6PM□□□J
	R201-210	CARBONFILM RESISTOR	RD1/6PM□□□J
	R211, 212		RCN1024 (CT-J400WR) RCN1028 (CT-J300WR)
	R213, 214	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R215, 216	CARBONFILM RESISTOR	RD1/6PM□□□J
	R301	CARBONFILM RESISTOR	RD1/6PM□□□J
	R302	CARBONFILM RESISTOR	RD1/6PM114J (CT-J400WR) RD1/6PM753J (CT-J300WR)
	R303-307	CARBONFILM RESISTOR	RD1/6PM□□□J
	R308	CARBONFILM RESISTOR	RD1/6PM753J (CT-J400WR) RD1/6PM223J (CT-J300WR)
	R309-313	CARBONFILM RESISTOR	RD1/6PM□□□J
	R314	CARBONFILM RESISTOR	RD1/6PM753J (CT-J400WR) RD1/6PM563J (CT-J300WR)
	R315-319	CARBONFILM RESISTOR	RD1/6PM□□□J
	R320	CARBONFILM RESISTOR	RD1/6PM303J (CT-J400WR) RD1/6PM273J (CT-J300WR)
	R321-325	CARBONFILM RESISTOR	RD1/6PM□□□J
	R326	CARBONFILM RESISTOR	RD1/6PM913J (CT-J400WR) RD1/6PM563J (CT-J300WR)
	R327	CARBONFILM RESISTOR	RD1/6PM823J (CT-J400WR) RD1/6PM393J (CT-J300WR)
	R328, 329	CARBONFILM RESISTOR	RD1/6PM□□□J
	R330	CARBONFILM RESISTOR	RD1/6PM473J (CT-J400WR) RD1/6PM563J (CT-J300WR)
	R331	CARBONFILM RESISTOR	RD1/6PM□□□J
	R332	CARBONFILM RESISTOR	RD1/6PM683J (CT-J400WR) RD1/6PM513J (CT-J300WR)
	R333-340	CARBONFILM RESISTOR	RD1/6PM□□□J
	R341, 342	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R343-349	CARBONFILM RESISTOR	RD1/6PM□□□J
	R401	CARBONFILM RESISTOR	RD1/2LF□□□J
	R402, 403	CARBONFILM RESISTOR	RD1/6PM□□□J
	R404	CARBONFILM RESISTOR	RCN1022
	R405, 406	CARBONFILM RESISTOR	RD1/6PM□□□J

Mark	No.	Description	Part No.
	R407	CARBONFILM RESISTOR	RCN1036
	R408	CARBONFILM RESISTOR	RCN1044
	R409-421	CARBONFILM RESISTOR	RD1/6PM□□□J
	R428	CARBONFILM RESISTOR	RD1/6PM□□□J
	R463-466	CARBONFILM RESISTOR	RD1/6PM□□□J
	R601-609	CARBONFILM RESISTOR	RD1/6PM□□□J
	R701-709	CARBONFILM RESISTOR	RD1/6PM□□□J
	R711-724	CARBONFILM RESISTOR	RD1/6PM□□□J
	R726-733	CARBONFILM RESISTOR	RD1/6PM□□□J
	R737-740	CARBONFILM RESISTOR	RD1/6PM□□□J
	R751-762	CARBONFILM RESISTOR	RD1/6PM□□□J
	R763	RESISTOR ARRAY (22K)	RA5T□□□J
	R764	CARBONFILM RESISTOR	RD1/6PM□□□J
	R765	LADDER RESISTOR	RCX1020
	R767	CARBONFILM RESISTOR	RD1/6PM□□□J
	R768	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R805	METALFILM RESISTOR	RN1/6PQ□□□□F
	R806-810	CARBONFILM RESISTOR	RD1/6PM□□□J
	R804, 854(10K)		RCN1049
	R816	CARBONFILM RESISTOR	RD1/6PM□□□J
	R818		RN1/6PQ□□□□F
	R855	METALFILM RESISTOR	RN1/6PQ□□□□F
	R856-860	CARBONFILM RESISTOR	RD1/6PM□□□J
	R866	CARBONFILM RESISTOR	RD1/6PM□□□J
	R901-904	CARBONFILM RESISTOR	RD1/6PM□□□J
	R906-908	CARBONFILM RESISTOR	RD1/6PM□□□J
	R910	CARBONFILM RESISTOR	RD1/6PM□□□J
	R912	CARBONFILM RESISTOR	RD1/6PM□□□J
	R915-925	CARBONFILM RESISTOR	RD1/6PM□□□J
	R927-929	CARBONFILM RESISTOR	RD1/6PM□□□J
	R932	RESISTOR ARRAY 100K	RA5T□□□J
	R934, 935	CARBONFILM RESISTOR	RD1/6PM□□□J
	R938	CARBONFILM RESISTOR	RD1/6PM□□□J
	R942	CARBONFILM RESISTOR	RD1/6PM□□□J
	R949	RESISTOR ARRAY (22K)	RA4T□□□J
	R950-952	CARBONFILM RESISTOR	RD1/6PM□□□J
	R954	RESISTOR ARRAY (22K)	RA4T□□□J
	R955		RD1/6PM□□□J (CT-J400WR only)
	R956-961	CARBONFILM RESISTOR	RD1/6PM□□□J
	R966		RD1/6PM□□□J (CT-J300WR only)
	R977-991	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1001	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1002	CARBONFILM RESISTOR	RCN1046
	R1506-1519	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R1520	RESISTOR ARRAY (10K)	RA7T□□□J (CT-J400WR only)
	R1522	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R1524, 1525	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R1530-1535	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R1537	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R1539	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	R1541-1550	CARBONFILM RESISTOR	RD1/6PM□□□J (CT-J400WR only)
	VR101-104	VR	RCP1046
	VR301, 302	VR	RCP1046
	VR601, 602	VR	RCP1046
	VR802	VR	RCP1045
	VR851	VR	RCP1020
	VR852	VR	RCP1045
	VR1501, 1502	VR	RCP1048 (CT-J400WR only)

OTHERS

Mark	No.	Description	Part No.
	CN801	CONNECTOR(12P)	KPE12
	CN851	CONNECTOR(14P)	KPE14
	CN904	CONNECTOR	HLEM29S-1
	X901	CERAMIC RESONATOR(4.19MHz)	VSS1014

TRANSISTOR UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC1001	REGULATOR IC	NJM7812FA

OPERATE 1 UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1301, 1302	LED	SEL6410G
	D1303	DIODE	1SS254

SWITCHES

Mark	No.	Description	Part No.
	S1301-1305	SWITCH	RSG1033
	S1306	SWITCH	RSH1037

RESISTORS

Mark	No.	Description	Part No.
	R1301, 1302	CARBONFILM RESISTOR	RD1/6PM□□□J

OPERATE 2 UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1401, 1402	LED	SEL6410G

SWITCHES

Mark	No.	Description	Part No.
	S1401-1405	SWITCH	RSG1033
	S1406	SWITCH	RSH1037

RESISTORS

Mark	No.	Description	Part No.
	R1401-1404	CARBONFILM RESISTOR	RD1/6PM□□□J

DISPLAY UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1201-1207	DIODE	1SS254
	D1208		SEL6C10R (CT-J400WR) SEL6410E (CT-J300WR)
	D1209-1212		SEL6C10R

SWITCHES

Mark	No.	Description	Part No.
	S1201-1206	SWITCH	RSG1033
	S1208-1210	SWITCH	RSG1033

RESISTORS

Mark	No.	Description	Part No.
	R1201-1203	CARBONFILM RESISTOR	RD1/6PM□□□J
	VR1201	VARIABLE RESISTOR	RCW1009
		FL HOLDER(ABS)	RNK1755

OTHERS

Mark	No.	Description	Part No.
	CN9040	CONNECTOR	HLEM29S-1
	V1201		RAW1097

5.2 FOR CT-J200WR

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
⊙		MOTHER UNIT ├─MAIN UNIT └─TRANSISTOR UNIT	RWM1479
⊙		SUB UNIT ├─OPERATE 1 UNIT ├─OPERATE 2 UNIT └─DISPLAY UNIT	RWM1480

MAIN UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC101	PB-EQ AMP IC	CXA1115BP
	IC202	DOLBY IC	HA12136A
	IC301	REC EQUALIZER IC	CXA1198AP
	IC302	LOGIC IC	TC4051BP
	IC451	OP-AMP IC	NJM4558DX
	IC702	IC	BA15218N
	IC901	CPU(C-MOS)	PD3207A
⚠	IC1002	REGULATOR IC	NJM7812FA
⚠	IC1003	REGULATOR IC	NJM78M05FA
	Q101, 102	TRANSISTOR	XDC124ES
	Q103-106	DIGITAL TRANSISTOR	XDC114ES
	Q107, 108	N-FET	2SK373
	Q109, 110	TRANSISTOR	2SC3311A
	Q111-114	TRANSISTOR	XDC124ES
	Q115	TRANSISTOR	XDA124ES
	Q116	TRANSISTOR	XDC124ES
	Q201	TRANSISTOR	XDC124ES
	Q301, 302	TRANSISTOR	2SC3311A
	Q311	TRANSISTOR	XDA124ES
	Q313, 314	DIGITAL TRANSISTOR	DTC114TS
	Q401, 402	TRANSISTOR	2SC1815
	Q403	TRANSISTOR	2SD1302
	Q404	TRANSISTOR	2SB1238X
	Q406	TRANSISTOR	2SC3311A
	Q451, 452	TRANSISTOR	2SC3311A
	Q453, 454	TRANSISTOR	2SC1740SLN
	Q705	TRANSISTOR	DTC124TS
	Q707, 708	TRANSISTOR	2SD2144S
	Q709	TRANSISTOR	XDA124ES
	Q802	TRANSISTOR	2SA1309A
	Q803	TRANSISTOR	XDC124ES
	Q804	TRANSISTOR	2SA1286
	Q805	TRANSISTOR	XDC124ES
	Q807	TRANSISTOR	2SC3246
	Q852	TRANSISTOR	2SA1309A
	Q853	TRANSISTOR	XDC124ES
	Q854	TRANSISTOR	2SA1286
	Q855	TRANSISTOR	XDC124ES
	Q857	TRANSISTOR	2SC3246
	Q901-903	TRANSISTOR	2SC3311A
	Q905-908	DIGITAL TRANSISTOR	XDC114ES
	Q909	TRANSISTOR	XDC124ES
	Q951	DIGITAL TRANSISTOR	XDA114ES
	Q952	DIGITAL TRANSISTOR	XDC114ES
	Q953	DIGITAL TRANSISTOR	XDA114ES
	Q959	TRANSISTOR	2SC3311A
	D101-112	DIODE	1SS254
	D312	DIODE	1SS254
	D401	DIODE	1SS254
	D404, 405	DIODE	1SS254
	D451, 452	DIODE	1SS254
	D702-704	DIODE	1SS254
	D801	DIODE	1SS252
	D802, 803	DIODE	1SS254
	D806	DIODE	1SS254
	D851	DIODE	1SS252
	D852-856	DIODE	1SS254
	D901	DIODE	1SS254
	D905-908	DIODE	1SS254
	D910, 911	DIODE	1SS254
	D913, 914	DIODE	1SS254
	D917	DIODE	1SS254
	D951	DIODE	1SS254
⚠	D1001	DIODE	1SR35-100AVL
⚠	D1002	ZENER DIODE	MTZ5.1B

COILS/TRANSFORMERS

Mark	No.	Description	Part No.
	L101, 102	COIL	RTF1022
	L301, 302	COIL	RTF1004
	L402	RADIAL INDUCTOR	LFA121K
	T401	OSC TRANSFORMER	RTD1066
	F201, 202	FILTER	RTF1059

CAPACITORS

Mark	No.	Description	Part No.
	C101, 102	AXIAL CAPACITOR	CKPUYB561K50
	C103, 104	AXIAL CAPACITOR	CKPUYB391K50
	C105, 106	CERAMIC CAPACITOR	CKPUYB102K50
	C107-110	ELECTR. CAPACITOR	CEANL100M16
	C111, 112	ELECTR. CAPACITOR	CEANL101M10
	C113, 114	AXIAL CAPACITOR	CKPUYB101K50
	C117, 118	AUDIO FILM CAPACITOR	CFTXA822J50
	C119, 120	ELECTR. CAPACITOR	CEAS4R7M50
	C121, 122	AUDIO FILM CAPACITOR	CFTXA223J50
	C123, 124	AXIAL CAPACITOR	CKPUYB471K50
	C125, 126	AXIAL CAPACITOR	CKPUYB391K50
	C127, 128	AXIAL CAPACITOR	CKPUYB681K50
	C129, 130	ELECTR. CAPACITOR	CEAS470M16
	C131, 132	AXIAL CERAMIC C.	CCPUSL100J50
	C133	ELECTR. CAPACITOR	CEASR10M50
	C201, 202	ELECTR. CAPACITOR	CEAS010M50
	C207-210	ELECTR. CAPACITOR	CEAS4R7M50
	C216	ELECTR. CAPACITOR	CEASR33M50
	C219	ELECTR. CAPACITOR	CEASR33M50
	C221, 222	ELECTR. CAPACITOR	CEAS4R7M50
	C225	ELECTR. CAPACITOR	CEAS470M16
	C226	ELECTR. CAPACITOR	CEAS221M16
	C228	ELECTR. CAPACITOR	CEAS220M25
	C301, 302	AXIAL CAPACITOR	CKPUYB221K50

Mark	No.	Description	Part No.
	C303,304	ELECTR. CAPACITOR	CEAS4R7M50
	C305,306	ELECTR. CAPACITOR	CEAS471M10
	C307,308	ELECTR. CAPACITOR	CEASR68M50
	C309,310	ELECTR. CAPACITOR	CEAS2R2M50
	C311	ELECTR. CAPACITOR	CEAS331M16
	C313	CERAMIC CAPACITOR	CKCYF473Z50
	C401,402	CERAMIC CAPACITOR	CCCSL101K500
	C403	CAPACITOR	CQPA162J100
	C404	AUDIO FILM CAPACITOR	CFTXA123J50
	C405	AUDIO FILM CAPACITOR	CFTXA153J50
	C406,407	AUDIO FILM CAPACITOR	CFTXA103J50
	C408-410	ELECTR. CAPACITOR	CEAS470M16
	C451-454	ELECTR. CAPACITOR	CEAS010M50
	C455	ELECTR. CAPACITOR	CEAS100M50
	C456	ELECTR. CAPACITOR	CEASR33M50
	C711,712	CERAMIC CAPACITOR	CGCYX104K25
	C713	AXIAL CAPACITOR	CKPUYB101K50
	C714	ELECTR. CAPACITOR	CEASR47M50
	C715	AXIAL CAPACITOR	CKPUYB271K50
	C716	ELECTR. CAPACITOR	CEASR22M50
	C717	CERAMIC CAPACITOR	CKCYF103Z50
	C801	CERAMIC CAPACITOR	CKCYF473Z50
	C901	ELECTR. CAPACITOR	CEAS4R7M50
	C905	CERAMIC CAPACITOR	CKCYB102K50
	C906	CERAMIC CAPACITOR	CKCYF103Z50
	C907	ELECTR. CAPACITOR	CEAS470M16
	C908	CERAMIC CAPACITOR	CKCYF103Z50
	C912,913	CERAMIC CAPACITOR	CKCYF103Z50
	C917	CERAMIC CAPACITOR	CKCYF103Z50
	C918	ELECTR. CAPACITOR	CEAS100M50
	C919, 920	CERAMIC CAPACITOR	CKCYB102K50
	C951	CERAMIC CAPACITOR	CKCYF103Z50
	C952	ELECTR. CAPACITOR	CEAS4R7M50
	C1001	ELECTR. CAPACITOR	CEAS471M25
	C1002	ELECTR. CAPACITOR	CEAS221M16
	C1003	CERAMIC CAPACITOR	CKCYF473Z50
	C1004	ELECTR. CAPACITOR	CEAS101M25
	C1005	ELECTR. CAPACITOR	CEAS101M16
	C1006	CERAMIC CAPACITOR	CKCYF473Z50
	C1007	ELECTR. CAPACITOR	CEAS222M25
	C1008	ELECTR. CAPACITOR	CEAS470M16
	C1010	ELECTR. CAPACITOR	CEAS100M50
	C1011	CERAMIC CAPACITOR	CKCYF103Z50
	C1012	ELECTR. CAPACITOR	CEAS470M16

RESISTORS

Mark	No.	Description	Part No.
	R101-135	CARBONFILM RESISTOR	RD1/6PM□□□J
	R202	CARBONFILM RESISTOR	RD1/6PM□□□J
	R210	CARBONFILM RESISTOR	RD1/6PM□□□J
	R211,212	CARBONFILM RESISTOR	RCN1028
	R216	CARBONFILM RESISTOR	RD1/6PM□□□J
	R221-224	CARBONFILM RESISTOR	RD1/6PM□□□J
	R301-324	CARBONFILM RESISTOR	RD1/6PM□□□J
	R337-340	CARBONFILM RESISTOR	RD1/6PM□□□J
	R343-349	CARBONFILM RESISTOR	RD1/6PM□□□J
	R351-353	CARBONFILM RESISTOR	RD1/6PM□□□J
	R401	CARBONFILM RESISTOR	RD1/2LF□□□J
	R402,403	CARBONFILM RESISTOR	RD1/6PM□□□J
	R404	CARBONFILM RESISTOR	RCN1022
	R405	CARBONFILM RESISTOR	RD1/6PM□□□J
	R407	CARBONFILM RESISTOR	RCN1026
	R408	CARBONFILM RESISTOR	RCN1020
	R409-412	CARBONFILM RESISTOR	RD1/6PM□□□J
	R415,416	CARBONFILM RESISTOR	RD1/6PM□□□J
	R418-420	CARBONFILM RESISTOR	RD1/6PM□□□J
	R451-469	CARBONFILM RESISTOR	RD1/6PM□□□J
	R711-724	CARBONFILM RESISTOR	RD1/6PM□□□J
	R726-730	CARBONFILM RESISTOR	RD1/6PM□□□J
	R733	CARBONFILM RESISTOR	RD1/6PM□□□J
	R737,738	CARBONFILM RESISTOR	RD1/6PM□□□J
	R741,742	CARBONFILM RESISTOR	RD1/6PM□□□J
	R805	METALFILM RESISTOR	RN1/6PQ□□□□F
	R804, 854(10K)		RCN1049
	R806-810	CARBONFILM RESISTOR	RD1/6PM□□□J
	R816	CARBONFILM RESISTOR	RD1/6PM□□□J
	R818		RN1/6PQ□□□□F
	R855	METALFILM RESISTOR	RN1/6PQ□□□□F
	R856-860	CARBONFILM RESISTOR	RD1/6PM□□□J
	R866	CARBONFILM RESISTOR	RD1/6PM□□□J
	R906-908	CARBONFILM RESISTOR	RD1/6PM□□□J
	R910	CARBONFILM RESISTOR	RD1/6PM□□□J
	R912	CARBONFILM RESISTOR	RD1/6PM□□□J
	R915-925	CARBONFILM RESISTOR	RD1/6PM□□□J
	R927-929	CARBONFILM RESISTOR	RD1/6PM□□□J
	R932	RESISTOR ARRAY 100K	RA5T□□□J
	R934,935	CARBONFILM RESISTOR	RD1/6PM□□□J
	R938	CARBONFILM RESISTOR	RD1/6PM□□□J
	R942	CARBONFILM RESISTOR	RD1/6PM□□□J
	R949	RESISTOR ARRAY (22K)	RA4T□□□J
	R950-953	CARBONFILM RESISTOR	RD1/6PM□□□J
	R954	RESISTOR ARRAY (22K)	RA4T□□□J
	R955	CARBONFILM RESISTOR	RD1/6PM□□□J
	R957-964	CARBONFILM RESISTOR	RD1/6PM□□□J
	R977-991	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1001	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1002	CARBONFILM RESISTOR	RCN1046
	VR101-104	VR	RCP1046
	VR301,302	VR	RCP1046
	VR401,402	VR	RCP1049
	VR802	VR	RCP1045
	VR851	VR	RCP1020
	VR852	VR	RCP1045

OTHERS

Mark	No.	Description	Part No.
	CN801	CONNECTOR(12P)	KPE12
	CN851	CONNECTOR(14P)	KPE14
	CN904	CONNECTOR	HLEM17S-1
	X901	CERAMIC RESONATOR(4.19MHz)	VSS1014

TRANSISTOR UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC1001	REGULATOR IC	NJM7812FA

OPERATE 1 UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1303	DIODE	1SS254

SWITCHES

Mark	No.	Description	Part No.
	S1301-1305	SWITCH	RSG1033
	S1306	SWITCH	RSH1037

OPERATE 2 UNIT

SWITCHES

Mark	No.	Description	Part No.
	S1401-1405	SWITCH	RSG1033
	S1406	SWITCH	RSH1036

DISPLAY UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1201-1203	DIODE	1SS254
	D1205-1207	DIODE	1SS254
	D1208	LED	SEL6410E
	D1209-1214		SEL6C10R
	D1215-1218	LED	SEL6410G
	D1219		SEL6C10R

SWITCHES

Mark	No.	Description	Part No.
	S1201-1206	SWITCH	RSG1033
	S1210	SWITCH	RSG1033

RESISTORS

Mark	No.	Description	Part No.
	R1201-1209	CARBONFILM RESISTOR	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN9040	CONNECTOR	HLEM17S-1

6. ADJUSTMENTS

6.1 MECHANICAL ADJUSTMENT

These adjustments must be performed in the TEST MODE.

- Entering the TEST MODE
  Set the Reverse Mode Switch to ⊂⊃ , and short the TEST MODE jumper wire.
- Releasing the TEST MODE
  Press the STOP keys of DECKs I and II simultaneously.

1. Tape Speed Adjustment and Check

No.	Deck	Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)	Remarks
1	I	Normal speed PLAY	STD-301 (3 kHz)		**Play back for 1 minute and then press the FF or REW key. *1**	
2		Double speed PLAY		check	6000 Hz ±600 Hz	
3		Normal speed PLAY			**Press the FF or REW key after checking.**	
4	II				**Play back for 1 minute and then press the FF or REW key. *1**	
5		Double speed PLAY		VR851	Within ± 10Hz of step 2 (deck I) check value.	
6		Normal speed PLAY			**Press the FF or REW key after checking.**	
7	I			VR802	3000 Hz ±5 Hz	
8	II			VR852	Within ±5 Hz of step 7 (deck I) adjustment value.	

***1: If the FF or REW key is pressed during PLAY, double speed mode is selected.**

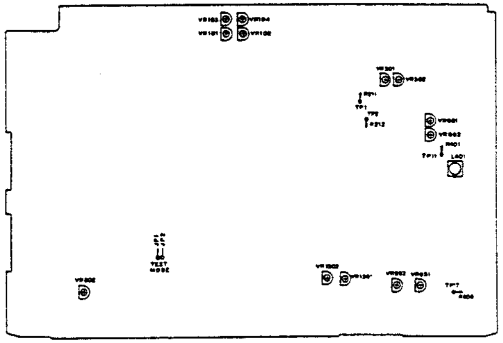


Fig. 6-1 Adjusting points

- Door damping check and adjustment

1. When assembling the front panel attach the door spring to the position (a) according to fig. 6–2, and stand the front panel assembly straight up as shown in fig. 6–3.
2. Open the doors of DECK I and DECK II simultaneously, and when one of the doors is fully opend, confirm that the disparity between the two doors is within 15 mm.
3. If the specification described in steps 2 is not satisfied, change the door spring position as follows and adjust.

- **When the door of DECK I opens slower than the one of DECK II: Change the DECK I door spring to position (b).**
- **When the door of DECK I opens faster than the one of DECK II: Change the DECK II door spring to position (b).**
  (Basically adjust the door which opens slower to the faster one.)

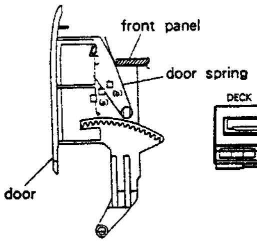


Fig. 6-2

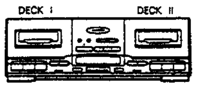


Fig. 6-3

6.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBv=1 Vrms.
5. Connect a 50 kΩ (or between 47k to 52 kΩ) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Test Tapes

STD–331E : Playback adjustments (See Fig. 6–4)
STD–631 : NORMAL blank tape
STD–620 : CrO2 blank tape
STD–610 : METAL blank tape

※ As the reference recording level is 250 nwb/m for STD–331E, the recording level will be higher by 4 dB for STD–331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Recording bias adjustment.
3. Recording level adjustment.
4. AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

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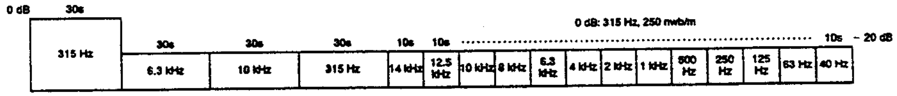


Fig. 6–4 Constants of the test tape STD–331E

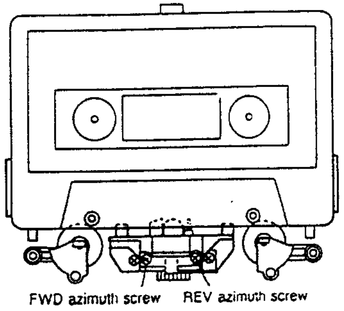


Fig. 6–5 Head azimuth adjustment

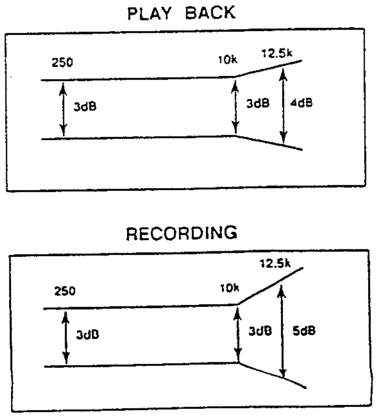


Fig. 6–6 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR103, VR104 (Deck I) or VR101, VR102 (Deck II) to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/–20 dB section of STD–331E test tape.	Head azimuth adjustment screw. (See Fig. 6–5)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD–331E test tape.	Deck I	VR103 (Lch) VR104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	–6.7 dBv (CT–J400WR/J300WR) –3.2 dBv (CT–J200WR)	
			Deck II	VR101 (Lch) VR102 (Rch)			

RECORDING SECTION

1. Bias Oscillator Frequency Adjustment (CT-J400WR/CT-J300WR)

- Adjust the bias oscillator with checks set to recording mode simultaneously. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD–610 test tape with no input signal.	Deck II	L401	TP. 11	106 ± 0.3 kHz	

2. Recording Bias Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)
- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC	Record the 315 Hz and 6.3 kHz signals at –20 dB input level and playback.	Deck II	VR601 (Lch) VR602 (Rch) (CT–J400WR/J300WR) VR401 (Lch) VR402 (Rch) (CT–J200WR)	LINE OUT	Repeatedly record, playback and adjust so that the plyaback level of 6.3 kHz signal becomes +0.5 dB ± 0.5 dB when compared with the 315 Hz signal.	

3. Recording Level Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC/ PAUSE	Apply a 315 Hz/–4 dB signal to the line input terminals, load the STD–631 test tape.	REC level control volume		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBv (CT–J400WR/J300WR) –7.7 dBv (CT–J200WR)	
3	STOP	Set the DOLBY NR switch to the ON position. (DOLBY B)					
4.	REC/ PLAY	Record the above signal onto the STD–631 test tape, and playback.	Deck II	VR301 (Lch) VR302 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes –11.2 dBv (CT–J400WR/J300WR) –7.7 dBv (CT–J200WR)	
5.	STOP	Set the TAPE SELECTOR switch to the CrO2 position.					
6.	REC/ PLAY	Record the above signal onto the STD–620 test tape, and playback.	Check		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBv ± 1.5 dB (CT–J400WR/J300WR) –7.7 dBv ± 1.5 dB (CT–J200WR)	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.					
8.	REC/ PLAY	Record the above signal onto the STD–610 test tape, and playback.	Check		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBv ± 1.5 dB (CT–J400WR/J300WR) –7.7 dBv ± 1.5 dB (CT–J200WR)	

4. AUTO BLE Adjustment

- BLE adjustment should be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode.
  Short JP1 and JP2, and turn on the power switch to set the test mode.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	–	Set to test mode.	–	–	–	
2.		Press the MUTE key on the front panel.	Level meter (Rch)	VR1501	Adjust so that –4 dB on the level meter lights up. *1	400 Hz adjustment
3.		Press the PAUSE key.		VR1502	Adjust so that –4 dB on the level meter lights up. *1	10 kHz adjustment

*1: Adjustment is performed starting with the lower level, by adjusting to the point where –6 dB changes to –4 dB.

6. REGLAGE

6.1 RÉGLAGES MECANIQUES

Ces réglages doivent être réalisés en TEST MODE.
- Commutation de TEST MODE
  Positionner l'inverseur sur ⊏⊐ et court-circuiter le câble de connexion.
- Relâchement de TEST MODE
  Appuyer simultanément sur les touches STOP de DECK I et II.

1. Réglage et vérification de la vitesse de defilement de la bande

No.	Platine	Mode	Bande test	Points de réglage	Spécifications/valeurs (fréquence de lecture)	Remarques
1	I	Lecture à vitesse normale	STD-301 (3 kHz)	Lire pendant 1 minute, puis appuyer sur la touche FF ou REW. *1		
2		Lecture à vitesse double		Vérifier	6000 Hz ± 600 Hz	
3		Lecture à vitesse normale		Appuyer sur la touche FF ou REW aprés contrôle.		
4	II			Lire pendant 1 minute, puis appuyer sur la touche FF ou REW. *1		
5		Lecture à vitesse double		VR851	Dans la limite de ±10 Hz de la valeur de vérification de 1' étape 2 (platine I)	
6		Lecture à vitesse normale		Appuyer sur la touche FF ou REW aprés contrôle.		
7	I			VR802	3000 Hz ±5 Hz	
8	II			VR852	Dans la limite de ±5 Hz de la valeur de réglage de 1'étape 7 (platine I).	

*1: Le mode vitesse double est sélectionné lorsque la touche FF ou REW est enfoncée pendant la lecture PLAY.

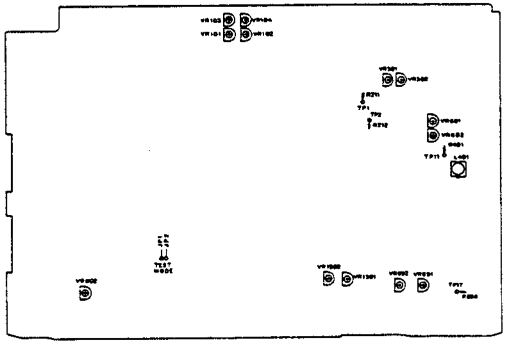


Fig. 6-1 Points de réglage

- Contrôle et réglage de l'amortissement de porte

1. Au montage du panneau avant, fixer le ressort de porte à la position (a) conformément à la fig. 6–2 et mettre debout l'ensemble de panneau avant comme illustré sur la Fig. 6–3.
2. Ouvrir simultanément les portes de la platine I (DECK I) et de la platine II (DECK II) et vérifier, lorsqu'une des portes est complètement ouverte, que la différence entre les deux portes est in férieure à 15 mm.
3. Si la spécification décrite dans les étapes 2 n'est pas satisfaite, changer comme suit la position du ressort de porte et régler.
- Lorsque la porte de la Platine I s'ouvre plus lentement que celle de la Platine II: Placer le ressort de porte de la Platine I sur la position (b).
- Lorsque la porte de la Platine I s'ouvre plus rapidement que celle de la Platine II: Placer le ressort de porte de la Platine II sur la position (b).
  (En principe, ajuster la porte qui s'ouvre plus lentement à celle qui s'ouvre plus vite)

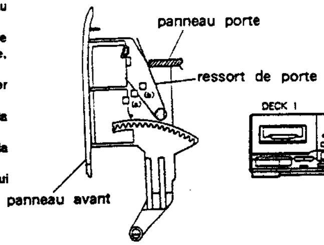


Fig. 6-2

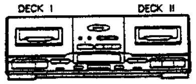


Fig. 6-3

6.2 REGLAGES ELECTRIQUES

Conditions de réglage

1. Les réglages mécaniques doivent tout d'abord être terminés.
2. Les têtes doivent être nettoyées et démagnétisées.
3. Mettre la platine sous tension et la laisser chauffer pendant au moins quelques minutes avant de commencer les réglages électriques.
4. Le signal de référence est de 0 dBv=1 Vrms.
5. Connecter une résistance de charge de 50 kΩ (tolérance 47k à 52 kΩ) aux bornes de sortie (OUTPUT).
6. Sauf indication contraire, les commutateurs ci–dessous doivent être laissés sur les positions indiquées.
   DOLBY NR : OFF
   Sélecteur de bande (TAPE SELECTOR) : NORM

Bandes d'essai

STD–331E	: Réglages de la lecture (Voir fig. 6–4)
STD–631	: Bande vierge de type normal
STD–620	: Bande vierge de type chrome
STD–610	: Bande vierge de type métal

※ Le niveau d'enregistrement de référence étant de 250 nwb/m pour le STD–331E, le niveau d'enregistrement sera supérieur de 4 dB pour le STD–331B (160 nwb/m). Pour le réglage, tenir compte du type de bande utilisé.

Liste des réglages

Sections de lecture
1. Réglage de l'azimut de la tête.
2. Réglage du niveau de lecture.

Sections d'enregistrement
1. Réglage de l'oscillateur de polarisation.
2. Réglage de la polarisation d'enregistrement.
3. Réglage du niveau d'enregistrement.
4. Réglage de AUTO BLE.

REMARQUE:
Cette unité est dotée d'une sélection automatique de bande.

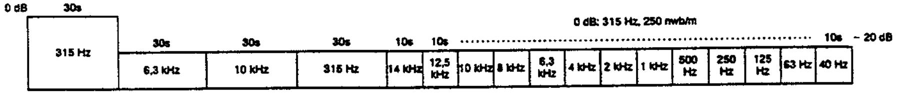


Fig. 6–4 Constantes de la bande d'essai STD–331E

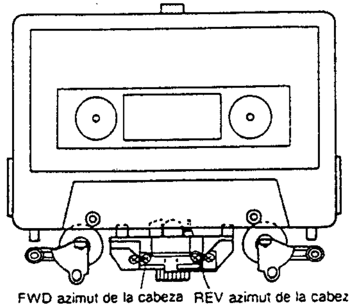
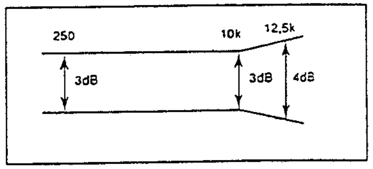


Fig. 6–5 Réglage de l'azimut de la tête

REPRODUCCION



GRABACION

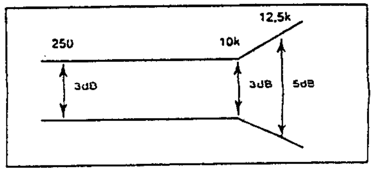


Fig. 6–6 Zone de réponse en fréquence

SECTION DE LECTURE

1. Réglage de l'azimut de la tête

- Tourner VR103, VR104 (Platine I) ou VR101, VR102 (Platine II) sur leur position centrale mécanique.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 10 kHz/–20 dB de la bande d'essai STD–331E.	Vis de réglage de l'azimut de la tête. (Voir fig. 6–5)	Sortie de ligne (LINE OUT)	Niveau du signal de reproduction maximum.	
2.	STOP	Verrouiller la vis avec le verrouillage de vis après avoir terminé le réglage.				

2. Réglage du niveau de lecture

- Ce réglage détermine le niveau DOLBY NR et il doit être effectué très soigneusement.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 315 Hz/0 dB de la bande d'essai STD–331E.	Platine I	VR103 (can. G) VR104 (can. D)	TP. 1 (can. G) TP. 2 (can. D)	–6.7 dBv (CT–J400WR/J300WR) –3.2 dBv (CT–J200WR)	
			Platine II	VR101 (can. G) VR102 (can. D)			

SECTION D'ENREGISTREMENT

1. Réglage de la fréquence de l'oscillateur de polarisation (CT–J400WR/CT–J300WR)

- Régler l'oscillateur de polarisation, les platines étant réglées simultanément dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD–610 et n'introduire aucun signal.	Platine II	L401	TP. 11	106 ± 0.3 kHz	

2. Réglage de la polarisation d'enregistrement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)
- Après le réglage, des précautions doivent être prises pour éviter une sous–polarisation en vérifiant le taux de distorsion.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC	Enregistrer les signaux 315 Hz et 6,3 kHz à un niveau d'entrée de –20 dB et les reproduire.	Platine II	VR601 (can. G) VR602 (can. D) (CT–J400WR/J300WR) VR401 (can. G) VR402 (can. D) (CT–J200WR)	Sortie de ligne (LINE OUT)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau de lecture du signal 6,3 kHz devienne +0.5 dB ± 0.5 dB lorsqu'il est comparé avec le signal 315 Hz.	

3. Réglage du niveau d'enregistrement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC/ PAUSE	Appliquer un signal de 315 Hz/–4 dB aux bornes d'entrée de ligne, charger la bande d'essai STD–631.	Volume de la commande de niveau d'enregistrement.		TP. 1 (can. G) TP. 2 (can. D)	–11.2 dBv (CT–J400WR/J300WR) –7.7 dBv (CT–J200WR)	
3.	STOP	Régler le commutateur DOLBY NR sur la position ON. (DOLBY B)					
4.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD–631 et le reproduire.	Platine II	VR301 (can. G) VR302 (can. D)	TP. 1 (can. G) TP. 2 (can. D)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne –11.2 dBv (CT–J400WR/J300WR) –7.7 dBv (CT–J200WR)	
5.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position CrO2.					
6.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD–620 et le reproduire.	Vérifier		TP. 1 (can. G) TP. 2 (can. D)	–11.2 dBv ± 1.5 dB (CT–J400WR/J300WR) –7.7 dBv ± 1.5 dB (CT–J200WR)	
7.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position METAL.					
8.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD–610 et le reproduire.	Vérifier		TP. 1 (can. G) TP. 2 (can. D)	–11.2 dBv ± 1.5 dB (CT–J400WR/J300WR) –7.7 dBv ± 1.5 dB (CT–J200WR)	

4. Réglage de AUTO BLE.

- Le réglage BLE doit être effectué après que tous les autres réglages sont complétés.
- Ce réglage doit être effectué dans le mode d'essai.
- Passage au mode d'essai.
  Court–circuiter JP1 et JP2 et enclencher l'interrupteur d'alimentation pour régler le mode d'essai.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	–	Régler dans le mode d'essai.	–	–	–	
2.		Appuyer sur la touche MUTE du panneau avant.	L'indicateur de niveau (can. D)	VR1501	Régler de sorte que –4 dB sur l'indicateur de niveau s'allume. *1	Réglage 400 Hz
3.		Appuyer sur la touche PAUSE.		VR1502	Régler de sorte que –4 dB sur l'indicateur de niveau s'allume. *1	Réglage 10 kHz

*1: Le réglage est effectué en commençant par le niveau inférieur, en ajustant sur le point où –6 dB change en –4 dB.

6. AJUSTE

6.1 AJUSTE MECANICO

Estos ajustes deben efectuarse en el modo de prueba.

- Cómo poner el modo de prueba
  Coloque el interruptor del modo de inversión en ⊂⊃ , y cortocircuite el hilo de puenteado del modo de prueba.
- Cómo cancelar el modo de prueba
  Pulse las teclas STOP de las platinas I y II simultáneamente.

1. Ajuste y verificación de la velocidad de cinta

No.	Platina	Modo	Cinta de prueba	Puntos de ajuste	Especificaciones/valores nominales (frecuencia de reproducción)	Comentarios
1	I	PLAY (velocidad normal)	STD-301 (3 kHz)	**Reproduzca durante 1 minuta y oprima, entonces, la tecla FF o la REW.** *1		
2		PLAY (velocidad doble)		Verificar	6000 Hz ± 600 Hz	
3		PLAY (velocidad normal)		**Pulse la tecla FF o la REW después de la verificación.**		
4	II			**Reproduzca durante 1 minuta y oprima, entonces, la tecla FF o la REW.** *1		
5		PLAY (velocidad doble)		VR851	Dentro de un margen de ± 10 Hz del valor de verificación del paso 2 (platina I).	
6		PLAY (velocidad normal)		**Pulse la tecla FF o la REW después de la verificación.**		
7	I			VR802	3000 Hz ± 5 Hz	
8	II			VR852	Dentro de un margen de ± 5 Hz del valor de verificación del paso 7 (platina I).	

***1: Si pulsa la tecla FF o la REW durante la reproducción, se seleccionará el modo de doble velocidad.**

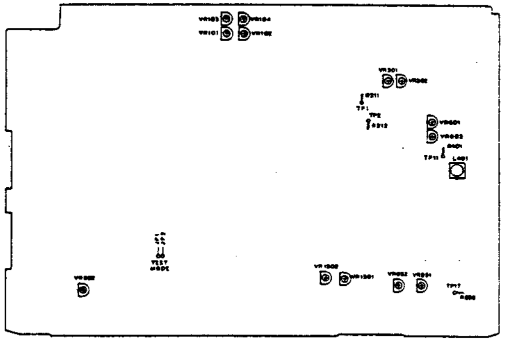


Fig. 6-1 Puntos de réglage

- Comprobación y ajuste del amortiguamiento de las puertas.

1. **Cuando monte el panel frontal, fije el resorte de la puerta en la posición (a) de acuerdo con la fig. 6–2 y ponga de pie y recto el conjunto del panel delantero tal como muestra la Fig. 6–3.**
2. **Abra las puertas del DECK I y DECK II simultáneamente y, cuando una de las puertas esté completamente abierta, confirme que la diferencia entre las dos puertas es menor de 15 mm.**
3. **Si las especificaciones descritas en los pasos 2 no se satisfacen, cambie la posición del resorte de la puerta de la forma siguiente y ajuste:**
   - **Cuando la puerta del DECK I se abre más lentamente que la del DECK II: Cambie el resorte de la puerta del DECK I a la posición (b).**
   - **Cuando la puerta del DECK I se abre más rápidamente que la del DECK II: Cambie el resorte de la puerta del DECK II a la posición (b). (Básicamente, adapte la puerta que se abre más despacio a la más rápida.)**

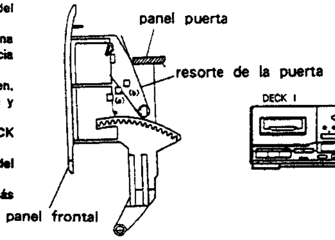


Fig. 6-2

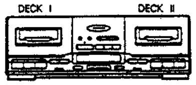


Fig. 6-3

6.2 AJUSTES ELÉCTRICOS

Condiciones de ajuste

1. Los ajustes mecánicos deben haberse completado primero.
2. La cabeza debe estar limpia y desmagnetizada.
3. Encienda la alimentación para permitir que la platina se caliente durante unos pocos minutos por lo menos antes de realizar cualquier ajuste eléctrico.
4. La señal de referencia es de 0 dBv=1 Vrms.
5. Conecte una resistencia de 50 kΩ (o entre 47k y 52 kΩ) en los terminales OUTPUT.
6. A menos que se especifique lo contrario, los conmutadores indicados más abajo deben dejarse en las posiciones indicadas.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Cintas de prueba

STD–331E	: Ajustes de reproducción (Consulte la figura 6–4)
STD–631	: Cinta virgen NORMAL
STD–620	: Cinta virgen de CrO2
STD–610	: Cinta virgen de METAL

※ Como el nivel de grabación de referencia es igual a 250 nwb/m para el STD–331E, el nivel de grabación será 4 dB mayor para el STD–331B (160 nwb/m). Al realizar el ajuste, preste suma atención al tipo de cinta que se está utilizando.

Lista de ajustes

Secciones de reproducción

1. Ajuste de azimut de la cabeza
2. Ajuste del nivel de reproducción

Secciones de grabación

1. Ajuste del oscillador de polarización
2. Ajuste de la polarización de grabación
3. Ajuste del nivel de grabación
4. Ajuste AUTO BLE

NOTA:
Esta unidad posee una función de selección automática de cinta.

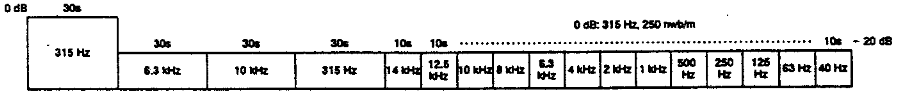


Figura 6–4 Constantes de la cinta de prueba STD–331E

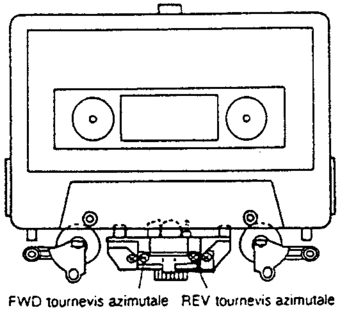


Figura 6–5 Ajuste de azimut de la cabeza

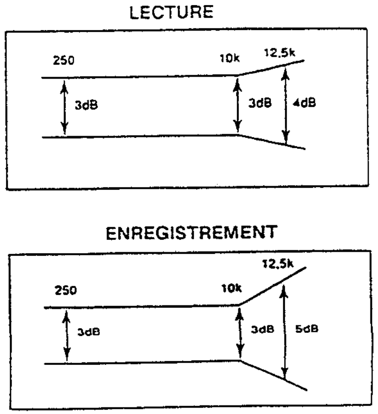


Figura 6–6 Zona de respuesta de frecuencia

SECCIÓN DE REPRODUCCIÓN

1. Ajuste del azimut de la cabeza

- Poner VR103, VR104 (platina I) o VR101, VR102 (platina II) en las posiciones del centro mecánico.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Reproduzca la sección de 10 kHz/–20 dB de la cinta de prueba STD–331E.	Tornillo de ajuste del azimut de la cabeza. (Vea la figura 6–5)	LINE OUT	Nivel máximo de la señal de reproducción.	
2.	STOP	Bloquee el tornillo con su cierre una vez finalizado el ajuste.				

2. Ajuste del nivel de reproducción

- Este ajuste determina el nivel DOLBY NR y debe realizarse con mucho cuidado.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Produzca la parte de 315 Hz/0 dB de la cinta de prueba STD–331E.	Platina I	VR103 (Lch) VR104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	–8.7 dBv (CT–J400WR/J300WR) –3.2 dBv (CT–J200WR)	
			Platina II	VR101 (Lch) VR102 (Rch)			

SECCIÓN DE GRABACIÓN

1. Ajuste de la frecuencial del oscilador de polarización (CT–J400WR/CT–J300WR)

- Ajuste el oscilador de polarización con los platinas puestas simultáneamente en el modo de grabación. (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD–610 sin señal de entrada.	Platina II	L401	TP. 11	106 ± 0.3 kHz	

2. Ajuste de polarización de grabación

- Ajuste el oscilador de polarización estando las platinas I y II ajustadas independientemente para el modo de grabación. → (Doble G/R sólo)
- Una vez finalizado el ajuste, compruebe el porcentaje de distorsión para no obtener subpolarización.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC	Grabe la señal de 315 Hz y 6,3 kHz a un nivel de entrada de –20 dB y reprodúzcala.	Platina II	VR601 (Lch) VR602 (Rch) (CT–J400WR/J300WR) VR401 (Lch) VR402 (Rch) (CT–J200WR)	LINE OUT	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6.3 kHz sea de +0.5 dB ± 0.5 dB cuando se compare con la señal de 315 Hz.	

3. Ajuste del nivel de grabación

- Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. → (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC/ PAUSE	Aplique una señal de 315 Hz/–4 dB a los terminales de entrada de línea e introduzca la cinta de prueba STD–631.	Control de nivel de grabación.		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBv (CT–J400WR/J300WR) –7.7 dBv (CT–J200WR)	
3.	STOP	Ponga el conmutador DOLBY NR en la posición ON. (DOLBY B)					
4.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD–631 y reprodúzcala.	Platina II	VR301 (Lch) VR302 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de –11.2 dBv (CT–J400WR/J300WR) –7.7 dBv (CT–J200WR)	
5.	STOP	Ponga el conmutador TAPE SELECTOR en la posición CrO2.					
6.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD–620 y reprodúzcala.	Verifique		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBv ± 1.5dB (CT–J400WR/J300WR) –7.7 dBv ± 1.5dB (CT–J200WR)	
7.	STOP	Ponga el conmutador TAPE SELECTOR en la posición METAL.					
8.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD–610 y reprodúzcala.	Verifique		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBv ± 1.5dB (CT–J400WR/J300WR) –7.7 dBv ± 1.5dB (CT–J200WR)	

4. Ajuste AUTO BLE

- El ajuste BLE debe efectuarse después de haber terminado todos los otros ajustes.
- Este ajuste debe efectuarse en el modo de prueba.
- Cómo establecer el modo de prueba.
  Cortocircuite JP1 y JP2, y conecte el interruptor de corriente para establecer el modo de prueba.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	–	Establezca el modo de prueba.	–	–	–	
2.		Pulse la tecla MUTE del panel delantero.	En medidor de nivel (Rch)	VR1501	Ajuste de modo que se encienda –4 dB en el medidor de nivel. *1	Ajuste de 400 Hz
3.		Pulse la tecla PAUSE.		VR1502	Ajuste de modo que se encienda –4 dB en el medidor de nivel. *1	Ajuste de 10 kHz

*1: El ajuste se efectúa empezando con el nivel inferior y ajustando el punto en donde –6 dB cambia a –4 dB.

7. IC DESCRIPTIONS

● IC901, PD3207A

Pin Function

Pin No.	Name	Function
1	S4	S0 to S7 perform FL segment input, key output, and level meter scan output.
2	S3	
3	S2	
4	S1	
5	S0	
6	G0	G0 to G5 perform FL grid output.
7	G1	
8	G2	
9	G3	
10	G4	
11	G5	
12	METER RESET	Resets the meter every time peak detection is performed during ASES peak search. RESET at "H". During BLE, RECOVERY FAST at "H".
13	SONG	Inputs the signal detecting the interval between songs during MS. Interval between songs at "L".
14	2–FWD LED	Displays the Side 2 FWD direction LED. LED lights up at "H".
15	2–REV LED	Displays the Side 2 REV direction LED. LED lights up at "H".
16	BLE/SKIP LED	Displays the BLE (SKIP) LED. LED lights up at "H".
17	2–REC LED	Displays the Side 2 REC LED. LED lights up at "H".
18	METER L	Pins which input the level during BLE, ASES when the level meter lights up. Synchronizes with the level scanning of Pins S0 to S4, takes in the "H" and "L" of the comparator output, and determines the level.
19	METER R	
20	S1 ENA	Sets the S1 mode at "H".
21	S01 ENA	Sets the S01 mode at "H".
22	BLE DATA	Communication data with the BLE expansion IC.
23	BLE CLK	Communication clock with expansion IC BU2040.
24	2–MOTOR	Turns on the 2–mechanism motor at "H".
25	2–SOL	Turns on the 2–mechanism solenoid at "H".
26	2–BIAS	Turns on the BIAS oscillator. BIAS ON at "H".
27	2–PB	Switches the REC and PB heads. Normally level "L". Becomes "H" during PLAY and MS, and the PB head turns on.
28	SD	System bus data. Functions as an input pin normally. Becomes an output pin when output is permitted.
29	ENA/$\overline{\text{REQ}}$	Functions as an output pin normally. During communication, becomes an input mode, and determines the permission or prohibition of communication. Normally level "H".
30	SCK	System bus clock. Normally level "H".
31	$\overline{\text{FLRST}}$	External interruption pin for key scan input. Interruption begins when G5 falls.
32	VCC	Power supply pin. +5V.

Pin No.	Name	Function
33	$\overline{\text{LINE MUTE}}$	Turns off during PLAY. LINE MUTE ON at "L".
34	2–REC MUTE	Turns off during REC. However, turns on during space mute. REC MUTE ON at "H".
35	$\overline{\text{ENCODE}}$	Becomes "H" when 1 or 2 mecha is during PLAY or MS. Switches the DECODE and ENCODE of the Dolby IC.
36	VR CONT	Controls the attenuation amount of the electronic VR using the PWM wave. The attenuation amount is 0 at "L", and infinite at "H".
37	VR FREE	Frees the electronic VR control from the manual VR, and sets the control by CPU. Always at level "L" except during ASES, and BLE.
38	1–MOTOR	Turns on the 1–mechanism capstan motor at "H".
39	1–SOL	Turns on the 2–mechanism solenoid at "H".
40	$\overline{\text{X2CONT}}$	Controls the speeds of both mecha capstan motors. Speed doubles at "L".
41	2–SENS	SENS 1 and 2 input the sensing pulse from the reel table, determines tape end. Used for the tape counter display, etc.
42	1–SENS	
43	KEYIN 0	KEYIN0 to KEYIN3 are key and level scan input pins. Normally, level "H". Becomes "L" at key or SW ON.
44	KEYIN 1	
45	KEYIN 2	
46	KEYIN 3	
47	RESET	Resets the CPU at level "H". Becomes level "L" when the power supply is on, and "H" when the power supply is off or the unit is not connected to AC outlet.
48	OSC2	Connects a 4.19 MHz ceramic lock between OSC1 and OSC2.
49	OSC1	
50	GND	GND pin
51	CL1	Not used. Connected to GND.
52	CL2	Not used. NC.
53	TEST	Not used. Connected to the Vcc electric potential.
54	1–FWD LED	Displays the Side 1 FWD direction LED. LED lights up at "H". Enters the test mode if it is "H" when the power is on.
55	1–REV LED	Displays the Side 1 REV direction LED. LED lights up at "H".
56	NC	Not used.
57	COPY LED	Lights up during X1 copy, and flickers during X2 copy. LED lights up at "H".
58	S13 (FINE LED)	FL segment output ("FINE" LED during the S01 mode)
59	S10 (NORM LED)	FL segment output ("NORM" LED during the S01 mode)
60	S9	FL segment output
61	S8	FL segment output
62	S7	S0 to S7 perform FL segment output, key output and level meter scan output.
63	S6	
64	S5	

TEST MODE

1 Entering the Test Mode

Supply the power with Pin 54 of the CPU connected to +5V.

2 Test Mode Operations

The BLE/SKIP LED will flicker while the test mode is operating, indicating that test mode is being set. During REC and REC PAUSE, the LINE MUTE opens in the same way as a deck sold separately.
Moreover, as the 5 seconds key mask immediately after the power is supplied will not be performed, test mode operations can be started immediately after mecha initialization.

(a) FL Check (S2, S1)
After the CPU RESET is released, the FL becomes a fully lighted display with only half of the luminance. As a result, disconnections and soldered bridges (the luminance of the bridge section will be normal) can be checked.
After mecha initialization has been completed, it can be returned to the normal display using any key input.

(b) Bus Port Operation Check
When the ENA/$\overline{\text{REQ}}$ pin (Pin 29) is set to "L", the SD pin (Pin 28) outputs the reversed level against the input level ("H" or "L") of the SCK pin (Pin 30).

ENA/$\overline{\text{REQ}}$ (29 pin)	SCK (30 pin)	SD (28 pin)
H	—	—
L	L	H
L	H	L

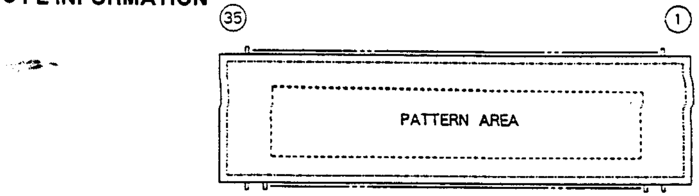
(c) Electronic VR (M51131L) Operation and ASES LED Checks Using the Reverse Mode
S2 and S1 switches the attenuation amount of M51131L when the reverse mode switches are used. S01 lights up the ASES LED.

	S2, S1	S01
Reverse Mode SW	Attenuation Amount (dB)	ASES LED
⇄	-30	NORM LED lights up.
⊃	Adjustment can be made with REC VR.	LED turns off.
↻	-1	FINE LED lights up.

3 Releasing the Test Mode

The test mode will be released and normal operations and displays will be set, when the ASES key is turned on with both mechanisms in the stop condition, or when the CPU hardware is reset.

● FL INFORMATION

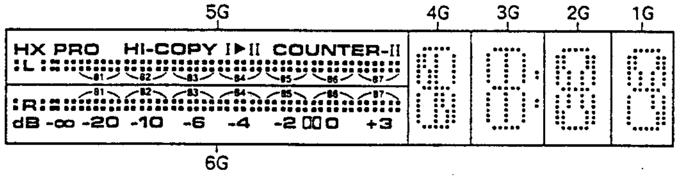


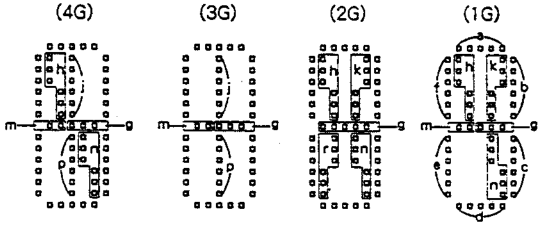
PIN CONNECTION

PIN NO.	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
CONNECTION	F2	F2	NP	P13	6G	5G	4G	3G	2G	1G	P6	P7	P8	P9	NP	NP	NP	NP

PIN NO.	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	NP	NP	NP	NP	NP	P10	P5	P4	P3	P2	P1	P11	P12	P14	NP	F1	F1

Note: 1) F1, F2 ......Filament
2) NP ....No pin
3) NC ....No connection
4) 1G–6G ......Grid



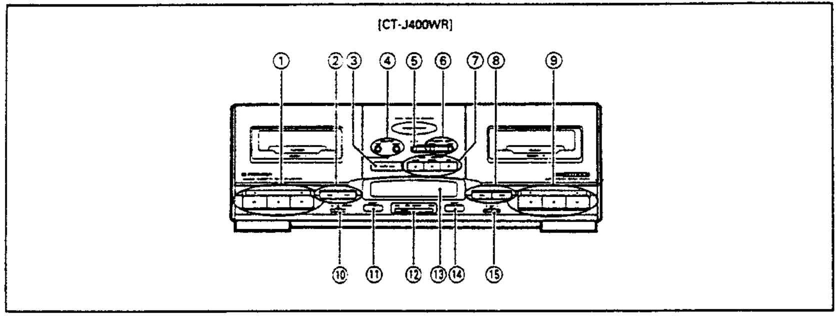


ANODE CONNECTION

	6G	5G	4G	3G	2G	1G
P1	B1	B1	a	a	a	a
P2	B2	B2	b	b	b	b
P3	B3	B3	c	c	c	c
P4	B4	B4	d	d	d	d
P5	B5	B5	e	e	e	e
P6	B6	B6	f	f	f	f
P7	B7	B7	g	g	g	g
P8	dB –∞ –20 –10 –6 –4 –2 0 0 +3	l	m	m	k, r	m
P9	—	COPY I▶II	j, p	j, p	h	h
P10	—	HI –	h, n	╪	n	k
P11	—	—	—	—	—	n
P12	:R	:L	—	—	—	—
P13	—	HX PRO	—	—	—	—
P14	—	COUNTER – I	—		—	—

8. PANEL FACILITIES

CT-J400WR



① Deck I operation buttons/indicators

► (PLAY) : For playing back a tape in the forward mode.
◄ (PLAY) : For playing back a tape in the reverse mode.
■ (STOP) : For stopping the tape.

② Deck I fast buttons

►► (FAST) : Fast forward in forward mode, rewind in reverse mode. Music search (MS) starts if this is pressed during playback.
◄◄ (FAST) : Rewind in forward mode, fast forward in reverse mode. Music search (MS) starts if this is pressed during playback.

③ AUTO BLE (Bias, Level, Equalizing) button/indicator

Pressing this button automatically sets the optimum recording bias, level, and equalization for your selected tape.

④ COUNTER buttons

TIME : Use this to switch between tape counter number display and display of elapsed time.
RESET : Use this to reset the tape counter display to 0000.

⑤ ASES button

This can be used when recording from a PD-J500T or PD-J900M CD player.
The A.S.E.S. (Auto Synchro Editing System) function automatically edits when recording from a CD to a tape.

⑥ SYNCHRO COPY buttons

Used for tape copying.
NORMAL : Copying from the deck I tape to the deck II tape at normal speed.
HIGH : Copying at about twice normal tape speed. (Copies can be made in about half the NORMAL time.)

⑦ DECK II CONTROL buttons/indicator

○ (MUTE) : Used for creating a blank space during recording.
⏸ (PAUSE) : Temporarily stops tape travel.
● (REC) : To set to recording standby mode. Recording begins when you press the play button (◄ or ►) or PAUSE (⏸) button.

⑧ Deck II fast buttons

The same as the operation in ② Deck I fast buttons.

⑨ Deck II operation buttons/indicators

The same as the operation in ① Deck I operation buttons.

⑩ REV (reverse) MODE switch

Use this to select tape travel direction during play and record.
= : One-sided play and record.
⊃ : This enables auto reverse recording and auto reverse play. If you start with the tape running in reverse, only reverse play and recording are possible.
⊂⊃ (RELAY) : This enables auto reverse recording and auto repeat playback.
The tape does not reverse if recording starts from the (◄) direction.
Select this position for DECK I and II relay play.

⑪ Deck I EJECT button

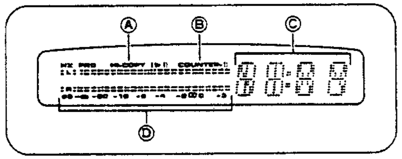
Press to open the cassette door.

NOTE:
This button functions only when the power is turned on.

⑫ REC VOLUME/REC LEVEL control

Use to adjust the recording level. It adjusts the input signal level.

⑬ Display section



Ⓐ Lights during tape copy.
Ⓑ Indicates the deck (I or II) displaying counter indications.
Ⓒ Tape counter or time counter indication of elapsed tape time. During Music search operation, it indicates the number of tracks skipped.
Ⓓ Level meter.
The DD mark displayed on the level meter is the Dolby NR system standard level.

⑭ Deck II EJECT button

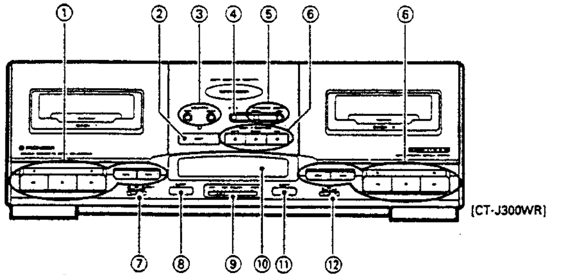
⑮ DOLBY* NR switch

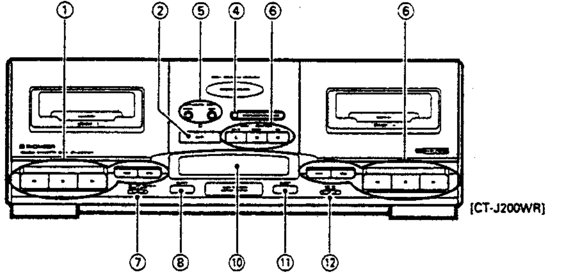
Set this switch to B or C for recording with the built-in Dolby Noise Reduction system and for playback of tapes which have been recorded using the Dolby Noise Reduction system. For other tapes, set the DOLBY NR switch to OFF.

NOTE:
When playing back Dolby NR-encoded tapes, always set this switch to the same position (B-type or C-type) used for recording.

- Dolby noise reduction and HX Pro headroom extension system manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
- "DOLBY", the double-D symbol DD and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

CT-J300WR AND CT-J200WR





① Deck I operation buttons

► PLAY (FWD) : For playing back a tape in the forward mode.
◄ PLAY (REV) : For playing back a tape in the reverse mode.
■ STOP : For stopping the tape.
►► : Fast forward in forward mode, rewind in reverse mode.
◄◄ : Rewind in forward mode, fast forward in reverse mode.

② SKIP button

Press this button in a blank section of more than 15 seconds encountered during playback, the unit fast forwards the tape to the beginning of the next selection and playback starts at that point.

③ COUNTER button (CT-J300WR only)

TIME : Use this to switch between tape counter number display and display of elapsed time.
RESET: Use this to reset the tape counter display to 0000.

④ ASES button

Used for automatically recording a CD on cassette tape

⑤ SYNCHRO COPY buttons

Used for tape copying.
NORM : Copying from the Deck I tape to the Deck II tape at normal speed.
HIGH : Copying at about twice normal tape speed. (Copies can be made in about half the NORM time.)

⑥ DECK II operation buttons

► PLAY (FWD): For playing back a tape in the forward mode.
◄ PLAY (REV) : For playing back a tape in the reverse mode.
■ (STOP) : For stopping the tape.
►► : Fast forward in forward mode, rewind in reverse mode.
◄◄ : Rewind in forward mode, fast forward in reverse mode.
● REC : To set to recording standby mode. Recording begins when you press the PLAY button (◄ or ►) or PAUSE button.
○ MUTE : When pressed once during recording, about four seconds non-recorded interval will be created on the tape, after which the unit will enter the recording pause mode. If held depressed continuously, the non-recorded interval will continue to be recorded for as long as the button is held depressed.
⏸ PAUSE : Stops tape transport temporarily during recording or playback. Press the button again to resume operation. (This can be also done by pressing the PLAY (► or ◄) button.) This button does not work during fast-forward and rewind.

⑦ REVERSE MODE switch

Use this to select tape travel direction during play and record.
= : One-sided play and record.
⊃ : This enables auto reverse recording and auto reverse play. If you start with the tape running in reverse, only reverse play and recording are possible.
⊂⊃ RELAY: This enables auto reverse recording and auto repeat play of up to 16 times. If you start with the tape running in reverse (◄) during recording, recording is only possible in that direction. When the tape ends during reverse play (◄), it counts as one repetition.

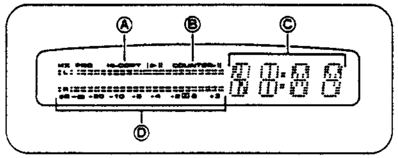
⑧ Deck I EJECT button

⑨ REC VOLUME (CT-J300WR only)

Use to adjust the recording level. It adjusts the recording signal level.

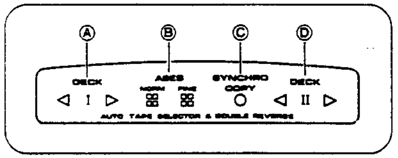
⑩ Display section

[CT-J300WR]



- Ⓐ Lights during tape copy.
- Ⓑ Indicates the deck (I or II) displaying counter indications.
- Ⓒ Tape counter or time counter indication of tape length.
  During Music search operation, it indicates the number of tracks skipped.
- Ⓓ Level Meter:
  The ꓒꓓ mark displayed on the level meter is the Dolby NR system standard level.

[CT-J200WR]



- Ⓐ Displays tape travel direction of DECK I.
- Ⓑ Lights during ASES MODE.
- Ⓒ Lights during tape copy.
- Ⓓ Displays tape travel direction of DECK II.

⑪ Deck II EJECT button

⑫ DOLBY* NR switch (B/OFF/C) [CT-J300WR]

Set this switch to B or C before recording with the built-in Dolby NR Systems and for playback of tapes which have been recorded using the Dolby NR systems.

- It is recommended that tapes recorded with Dolby B type NR or Dolby C type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.

- Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
- "DOLBY", the double-D symbol ꓒꓓ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

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⑫ DOLBY* NR switch (ON/OFF) [CT-J200WR]

Set this switch to the ON position to activate the DOLBY NR system.

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- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- "DOLBY" and the double-D symbol ꓒꓓ are trademarks of Dolby Laboratories Licensing Corporation.

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9. SPECIFICATIONS

CT-J400WR

Systems	4 track, 2-channel stereo
Heads	"Hard Permalloy" playback head x 1 "Hard Permalloy" recording/playback head x 1 "Ferrite" erasing head x 1
Motor	DC servo 2 speed motor x 2
Wow and flutter	±0.19 % (DIN) 0.09 % (WRMS)
Fast winding Time	Approximately 120 seconds (C-60 tape)
Frequency Response (−20 dB recording):	
TYPE I (Normal)	25 Hz to 16,000 Hz ±6 dB
TYPE II (HIGH/CrO_2)	25 Hz to 16,000 Hz ±6 dB
TYPE IV (Metal)	25 Hz to 17,000 Hz ±6 dB
Signal-to-Noise ratio	
Dolby NR OFF	More than 58 dB
Noise Reduction Effect	
Dolby B type NR ON	More than 10 dB (at 5 kHz)
Dolby C type NR ON	More than 19 dB (at 5 kHz)
Harmonic distortion	No more than 1.0 % (−4 dB: 160 nwb/m)

Miscellaneous

Dimensions	360 (W) x 120.5 (H) x 327.5 (D) mm
Weight (without package)	3.8 kg

CT-J300WR AND CT-J200WR

Tracks	4-tracks, 2-channel stereo
Playback head	Hard permaloy (x 1)
Recording/playback head	Hard permaloy (x 1)
Erasing head	Ferrite (x 1)
Motor	DC servo 2-speed motor (x 2)
Wow and flutter	No more than 0.09 % (WRMS) No more than ±0.19 % (DIN)
Rewind/fast forward time	about 120 seconds (with C-60 tape)
Frequency response:	
Type IV (metal) tape (CT-J300WR only)	25 Hz to 17,000 Hz ±6 dB (recorded at −20 dB)
TYPE II (CrO_2) tape	25 Hz to 16,000 Hz ±6 dB (recorded at −20 dB)
TYPE I (normal) tape	25 Hz to 16,000 Hz ±6 dB (recorded at −20 dB)
Signal-to-Noise ratio	58 dB
• With type B Dolby NR on	10 dB improvement at 5 kHz.
• With type C Dolby NR on (CT-J300WR only)	19 dB improvement at 5 kHz.

Other

Dimensions	380 (W) x 120.5 (H) x 327.5 (D) mm
Weight	3.8 kg